



# **How To Obtain Federal Employment In NOAA**

**U.S. DEPARTMENT OF COMMERCE  
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**NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
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## Foreword

This directory presents specific information about Federal careers and the agencies that employ college graduates for these positions. It enables the school counselor to provide general guidance to the college student interested in working for the Federal Government. For the student, the directory is valuable as a reference for investigating the wide variety of career choices offered in today's Federal Service.

### Federal Job Information

Positions in the Federal career service are filled through the competitive merit system. Appointments are based on the ability to do the work as demonstrated in competition with others.

The Office of Personnel Management operates a network of area offices located in Federal population centers throughout the country which announce and conduct competitions. These offices maintain applicant inventories and eligibility lists and refer the best qualified candidates to Federal agencies who are seeking new employees.

These offices, also, through their Federal Job Information Centers (FJIC's), offer a one-stop information service on Federal employment opportunities, particularly in the immediate vicinity.

Interested persons may receive details about some of the job openings in areas where they live, as well as in other locations nationwide. For answers to your questions about Federal job opportunities, call, visit, or write the information center in your city.

If you are located outside the local telephone dialing area, you can dial a toll-free 800 number when one is listed for the state in which you are dialing. This is made possible by the Office of Personnel Management's "Wide-Area Telephoning System" (WATS), bringing the job information centers and their services as near as the telephone in even the most remote locales. Check with your college placement office for the addresses and WATS phone numbers of the FJIC's.

The Office of Personnel Management invites you to call one of their information specialists before writing a letter or filling out an application for a job. These trained professionals will mail you the

appropriate job announcements, application forms, and pamphlets to help you through the proper procedures. A phone call can save you valuable time and unnecessary effort.

Federal Job Information Centers are open to serve you on Mondays through Fridays, except on legal holidays.

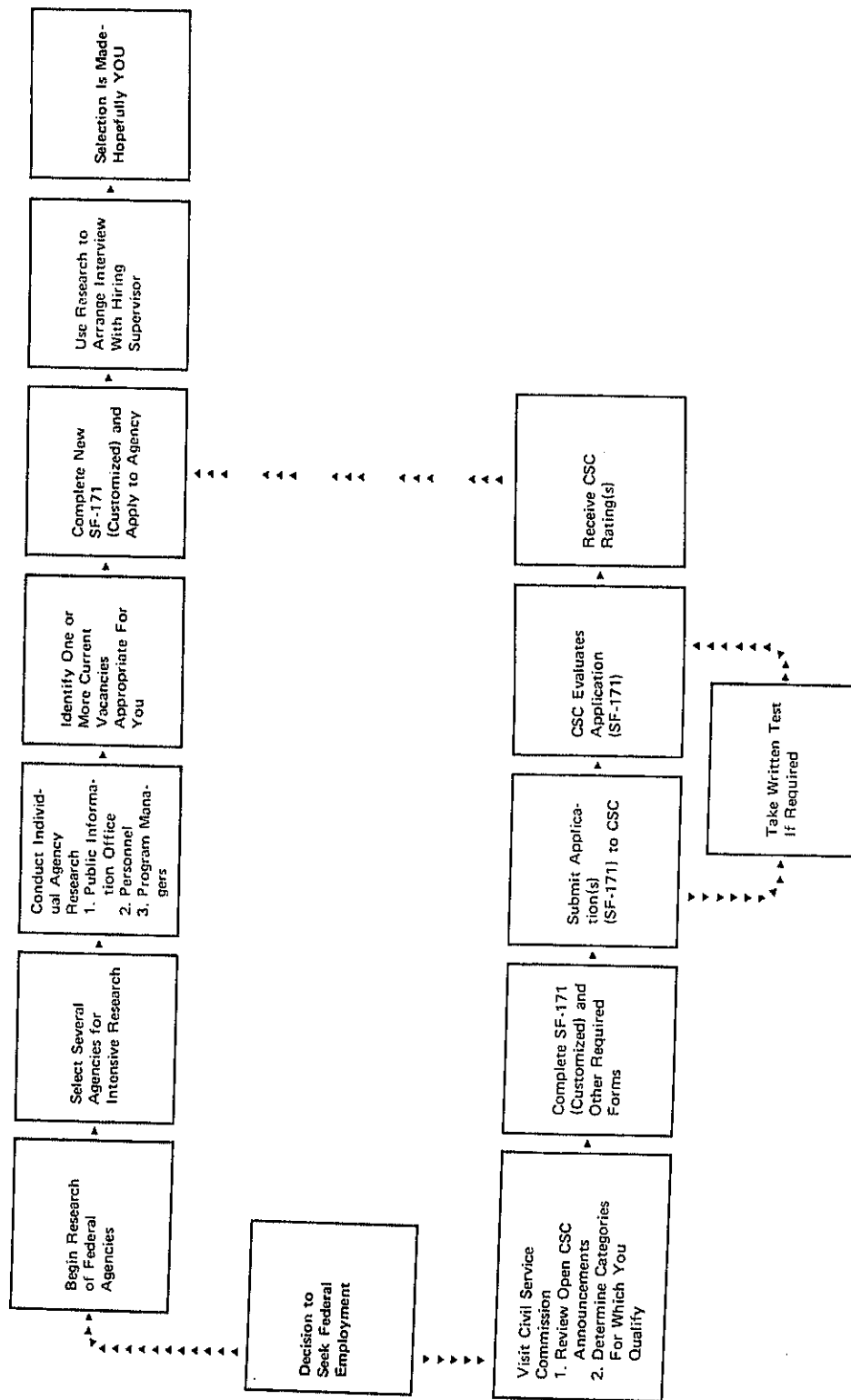
### Equal Opportunity

Please remember--under the Federal Civil Service Merit System people are hired strictly on the basis of their ability to do the work. Irrelevant factors such as race, sex, color, religion, or political affiliation, are not considered in the process of selecting Federal employees. Your Federal Government is the equal opportunity employer with the widest variety of opportunity. Take a look at this catalog of Federal jobs and see for yourself.

While this publication covers Federal jobs, generally, it also provides specific information about positions with one agency...the National Oceanic and Atmospheric Administration.

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## STEP BY STEP THROUGH THE FEDERAL EMPLOYMENT PROCESS

## **The Federal Employment System**

Most of the jobs you know about, and many you may never have heard of, exist in the Federal Civil Service. Only about 12 percent of these jobs are in Washington, D.C. Government employees work in offices, shipyards, laboratories, national parks, hospitals, military bases, and many other settings across the country and around the world. Most Federal civilian jobs are in the competitive service, which means that people applying for them must be evaluated by the Office of Personnel Management. The information in this chapter applies primarily to career (competitive) service jobs.

### **Excepted Service**

Some specific occupations (among them lawyers and chaplains) and some agencies (for example, the U.S. Postal Service, the Federal Bureau of Investigation, and the Central Intelligence Agency) are excepted from Office of Personnel Management procedures. If you are interested in an excepted service job, you should contact the agency of your interest directly. You can get a list of establishments in the excepted service from a Federal Job Information Center.

### **Federal Job Information Center**

The Office of Personnel Management maintains 83 Federal Job Information Centers across the country to provide local job information. They are listed under "U.S. Government" in the metropolitan area phone directories. If none is listed in your directory, you can dial 800-555-1212 for the toll free number of a Federal Job Information Center in your State.

### **How Jobs are Filled**

The Office of Personnel Management (OPM) accepts applications for Federal employment, based on the number of jobs Government agencies estimate they will fill in various locations over a period of time. After you apply, OPM examiners evaluate your application to see whether you are qualified for the kind of work you want. If you are qualified, your name goes on a list with the names of other people qualified for the same kinds of jobs. When Government hiring officials have

vacancies, they ask the Office of Personnel Management for the names of people qualified for the jobs. The names of individuals determined best qualified are referred from the OPM to the agency for consideration.

### Chances for Employment

Your chances of being hired depend on your qualifications, how fast vacancies are occurring in the area where you want to work, the number of qualified applicants who want the same kind of job, and the salary level you say you will accept. When there are many qualified applicants on Office of Personnel Management lists, applications are no longer accepted until there is a need for them. Because Government hiring needs vary from time to time, and from one location to another, you might be able to apply in one location for a particular kind of job, but be unable to apply for the same kind of work in another location. That's why it is important to check with the Federal Job Information Center in the area where you want to work.

### Veterans Preference

Veterans are entitled to certain preferences in obtaining Government jobs and in keeping jobs in the event of a lay off. If you are a veteran, be sure to state that you are when you inquire about a Government job.

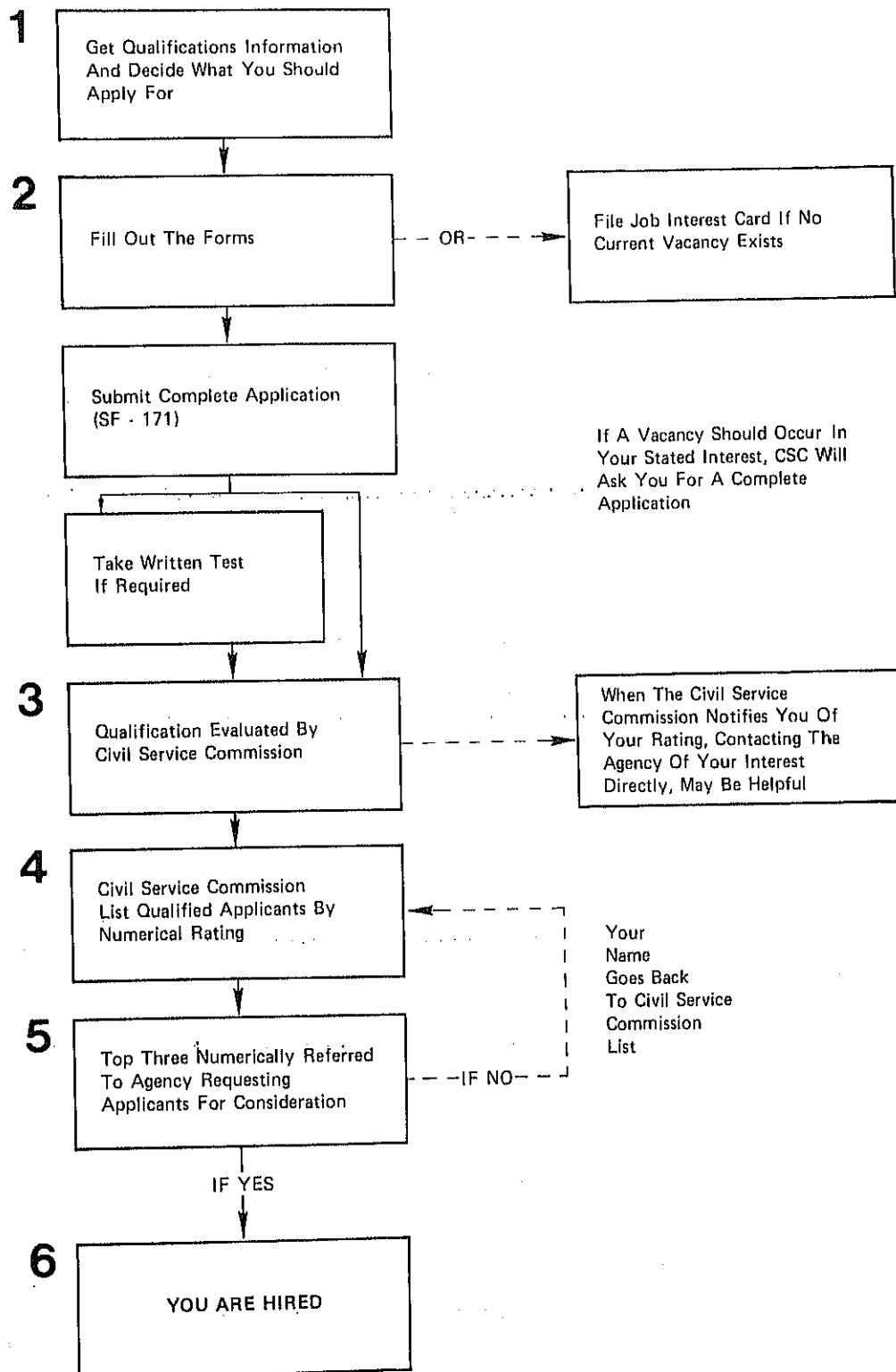
If applications were accepted during the time the veteran was still on active duty, he may apply within 120 days after discharge, even if applications are not being accepted from non-veterans. Additionally, if a veteran is entitled a 10-point veteran preference, the veteran may apply for many positions at any time. An example of a 10-point veteran preference would be a properly documented active duty disability.

### How to Apply for Federal Employment

Contact your local Federal Job Information Center to find out whether applications are being accepted in your area for the kind of work you want. Even if you are not sure what kind of work you are interested in, a Job Information Specialist may be able to suggest a type of job for which your education and experience qualify you.

### Steps to Get you Started

First, contact or visit your local Federal Job Information Center and find out what job applications are being accepted; then:



When you start to apply by contacting a Federal Job Information Center, be sure to state:

1. The level of education you have completed and the amount of paid and unpaid experience you have;
2. The kind of work that interests you;
3. The area or areas where you want to work;
4. The lowest salary you will accept, and
5. Dates of your Military Service, if any.

The Office of Personnel Management is able to help you better when they have this basic information.

#### Qualifications Needed

Government jobs are classified by grade levels based on each job's level of difficulty and responsibility. Salaries correspond to the grades; the higher the grade level, the higher the salary. A Government employee's pay is determined by the level of the job he or she fills, not necessarily by the employee's qualifications. (For example, if you are qualified for a GS-9, but accept a job at the GS-5 level, you will be paid the GS-5 salary, not the GS-9 salary.)

There are several pay systems, covering different kinds of jobs. For example, the General Schedule (GS) system covers most white collar jobs and protective occupations, such as guards. It starts at grades GS-1 and goes up to GS-18. Clerical workers usually start at GS-1, 2, or 3; guards at GS-4; white collar workers with experience or education equal to a college degree at GS-5.

#### Superior Academic Achievement

Superior academic achievement at the baccalaureate level or 1 year of student trainee experience is qualifying at GS-7. A combination of superior academic achievement at the baccalaureate level and 1 year of appropriate professional experience is qualifying at GS-9. In each case pertinent qualifying criteria must be met.

The grade level for which you qualify depends on your education and experience which is related to the kind of work you want.

## Forms

You can get the qualifications information and forms you'll need at the Federal Job Information Centers. If there is a current vacancy or a fairly consistent need for applications for the kind of work you want, you will be asked to submit a complete application. If there is only an occasional need, you may be asked to submit a job interest card. When vacancies occur, you will be contacted for a complete application.

## Written Test

Written tests are not required for many Government jobs; however, for others--including general administrative and clerical positions--a written test is required. If a written test is required for the kind of job you want, you will receive a notice telling you when and where to take the test, or an information sheet will list the dates and times when the test is given. It is not necessary to prepare for the test by taking a "Civil Service" course. No school can guarantee that you will be found qualified or that you will be offered a job.

## Rating

If you take a written test, you will receive a notice of your score and your name will go on the Civil Service list in the order of your score.

If the job you apply for doesn't require a written test, your rating will be based on the experience, education, and training you describe in your application. You will be notified of the status of your application by the office where you applied. For most scientific positions and most jobs at GS-9 and above, you will not receive a notice of your score at the time your application is processed; you will receive a letter acknowledging the receipt of your application and your name will go on the Civil Service list without a numerical rating. At the time an opening occurs, your qualifications will be reviewed in relation to the requirements of the particular job to be filled. If you are among the best qualified, your name will be referred to the agency along with names of the other best qualified applicants.

## The Rule of Three

By law, agency hiring officials may choose from among the top three applicants referred to them for a particular job. This explains why a person lower on the list may be hired, while the highest person is not.

The names of applicants not selected are returned to the Office of Personnel Management for consideration for future vacancies.

### Citizenship

With few exceptions, employees in the competitive service must be U.S. citizens. For more information, you should check with the agency in which you want to work.

### Age

Unless you are 16 and a high school graduate, the usual age at which you can be hired is 18. There is no maximum age limit. Some jobs (for example, many law enforcement positions) require that applicants not have passed their 35th birthday when they are hired. If this is true for the job you want, the qualifications information will say so.

### Suitability

At the time they are hired, or shortly thereafter, Federal employees are investigated to ensure their fitness for Government employment. The extent of the investigation depends on how sensitive their jobs are from the viewpoint of national security.

### Physical Requirements

You must be physically able to perform the duties of a job without being a hazard to yourself or others. A physical or mental handicap or a prior emotional problem isn't disqualifying. For information on testing and placement of handicapped persons, contact the Federal Job Information Center.

## **A Look at Federal Employment Opportunities for College Graduates**

The Federal Government, "The Employer of First Resort" for many college graduates, offers a variety of occupational opportunities. Competition is expected to remain at a fevered pitch for most positions during the academic year. Federal employment prospects are not as bright this year as they were in previous years. Some career-entry positions are available throughout the Nation, including the Washington, DC area. Career-entry positions are the jobs most often taken by graduates with a bachelor's degree. The starting grade is usually GS-5 or 7.

The outlook on available openings can most easily be described in terms of groups of occupations. A division can be made between all the occupations that require the Professional and Administrative Career Examination (PACE), which is described elsewhere in this issue, and those that do not. Among the occupations that do not require PACE are many in scientific and technical fields. These include positions in engineering, physical science, mathematics, accounting, auditing, health careers, agricultural science, and biological science.

Engineers have historically been the Government's greatest need, when supply is compared to demand. Engineering continues to offer the best placement chances in relation to the number of applicants competing for positions. Nationwide, the best opportunities are in electrical, electronic, general, industrial, mechanical, mining, and petroleum engineering. Civil and aerospace engineers face the greatest competition. Some of the major employers include the Departments of Navy, Interior, and Army; the National Aeronautics and Space Administration, and the Environmental Protection Agency. Higher salaries for career-entry engineers remain in effect (as compared to career-entry salaries for other occupations normally filled by bachelor's degree candidates.)

For physical science and mathematical positions, competition remains keen. The number of available, qualified candidates in most parts of the country exceeds the anticipated need. Numerical ratings in the 90's, sometimes the high 90's, are nearly always required for appointment consideration. Opportunities are best for those who majored in metallurgy, cartography, statistics, hydrology, and geology. Although the number of metallurgist positions filled annually is small, chances for employment are excellent because of the limited number of candidates. The majority of the metallurgist positions are in the Rocky Mountain and Midwestern States. Agencies in need of these workers

usually include the Departments of Agriculture and Interior; the Environmental Protection Agency; the Defense Mapping Agency; and the Veteran's Administration.

For accountant and auditor positions, the number of available qualified applicants is far in excess of anticipated needs throughout most of the country. Job-seekers in accounting with ratings in the mid-to-upper 90's are usually the only ones referred to agencies for consideration. The major employers are the Departments of Navy, Air Force, Agriculture, and Housing and Urban Development; the Internal Revenue Service; General Accounting Office, Veteran's Administration; and the General Services Administration.

The health and medical fields continue to offer outstanding opportunities. Veteran's Administration hospitals are the leading employer, although opportunities are also favorable with the Departments of Defense, Agriculture, and Health, Education, and Welfare. Shortages of well-qualified applicants exist in most fields and locations. There are excellent placement opportunities nationwide for physical and occupational therapists. Prospects are also excellent for medical officers, medical technologists, medical technicians, medical records librarians, industrial hygienists, physician's assistants, and nurses.

Opportunities for agriculture and biological science majors are limited. A major exception to this rule, however, are the excellent opportunities for agricultural commodity graders with a specialty in grain at the GS-5, 7, and 9 levels. Positions are located primarily in port cities and major storage areas in the Midwest and candidates must be willing to relocate. The job is physically demanding, since the work is performed both indoors and out. A bachelor's degree in agricultural marketing or agricultural economics will qualify people for GS-5; a master's degree in agronomy, botany, or soil science qualifies candidates for the GS-7 level. Other specializations that have the largest number of estimated hires for this year in agriculture and biological science include range conservation, soil science and conservation, general biology, and forestry. The primary employers are the Departments of Agriculture, Health, Education, and Welfare, Army, Interior, and the Environmental Protection Agency.

With regard to PACE, the greatest number of selection are usually in social administration and claims examining; tax-related fields; inspection and investigation; contract, procurement, and supply; personnel management; management and business-related fields, financial institution examining and quality assurance; contact representative; and the computer-related occupations. Even with the current high levels of competition, it is difficult to find appropriate candidates for some occupations, either because of the qualifications required or the unique characteristics of the job. Examples of these occupations include printing management and printing technology.

Mid-level positions include pay grades 9, 11, and 12. Most mid-level positions are filled by individuals who have had appropriate professional work experience, although people with advance degrees normally qualify for them. There is a surplus of candidates for most mid-level positions, although a few shortage occupations do exist. The best opportunities at GS-9 and above in Washington, DC are for position classifiers, program analysts, and economists with specialties in labor, agriculture, industry, econometrics, international economics, natural resources, finance, and transportation. Information about mid-level positions available elsewhere can be obtained from local Federal Job Information Centers.

The Office of Personnel Management is responsible for all positions, GS-5 through GS-15, that fall under the civil service merit system. These positions are called competitive positions, because applicants compete with one another for them. Taken all together, they form the competitive service. However, some Federal agencies have jobs outside the competitive service, primarily because of the nature of the work itself or the unique mission of the organization. These jobs are in the excepted service; that is, they are "excepted" from the procedures of the civil service merit system. As a rule, the Office of Personnel Management does not collect employment data from these agencies. Individuals who wish to obtain information about or apply for positions in the excepted service should contact the appropriate agencies.

Despite the intense competition for employment, the Federal Government is always in need of high caliber individuals who are committed to public service. This fact has not changed.

If you remember anything from this publication, let it be the following:

First, strive to do well, but be realistic. Competition is intense and the chances for Federal employment are limited.

Second, prospects for Federal Government occupations vary by specialty and location, as well as by agency. Contact your college placement office or a Federal Job Information Center for specific information about the opportunities available in the area you wish to be employed.

Third, despite current labor market conditions, the Federal Government is always in need of the best--because it is "The Employer of First Resort"!

## Job Briefs by College Major

This is a listing of the major fields of study which are considered valuable background for Government employment. Under each heading are a number of positions for which study in that field, or a pertinent specialization in that field, is particularly appropriate. This is just a representative sampling.

Individual job briefs should be consulted to determine the particular specialization of the college major which will qualify for appointment to those positions.

### Any College Major

Administrative assistant  
Alcohol and tobacco tax inspector  
Alcohol, tobacco, and firearms  
special investigator  
Budget officer  
Budget analyst  
Claims examiner  
Computer specialist  
Correctional officer  
Criminal investigator  
Customs inspector  
Deputy U.S. marshal  
Food program specialist  
Immigration inspector  
Import specialist  
Industrial specialist  
Intelligence research  
specialist  
Internal security inspector  
Investigator (General)  
Management analyst  
Museum curator  
Narcotics agent  
Personnel management specialist  
Personnel staffing specialist  
Public health program specialist

Public information specialist  
Quality assurance specialist  
Realty specialist  
Revenue officer  
Safety officer  
Secret service agent  
Supply management specialist  
Tax law specialist  
Veterans claims examiner  
Writer and editor

### Accounting

Accountant  
Agricultural marketing  
specialist  
Alcohol and tobacco tax  
inspector  
Budget officer  
Contract negotiator  
Economist  
Financial institution examiner  
Industrial labor relations  
specialist  
Internal revenue agent  
Investigator (General)  
Loan specialist  
Special agent (IRS)

Supply management specialist	Consumer safety inspector
Tax law specialist	Entomologist
Traffic manager and	Environmentalism
traffic management specialist	Fishery biologist
	Geologist
Agriculture or Agricultural Services	Medical technologist
	Microbiologist
Agricultural commodity grader	Oceanographer
Agricultural management	Park ranger
specialist	Pharmacologist
Agricultural marketing specialist	Physiologist
Agricultural market reporter	Plant Scientist
Animal husbandman	Range conservationist
Entomologist	Statistician
Hydrologist	Wildlife biologist
Plant scientist (various	Zoologist
branches)	
Range conservationist	Botany
Realty specialist	
Soil conservationist	Entomologist
Wildlife biologist	Forest products technologist
	Hydrologist
Anthropology (Social or Cultural)	Park ranger
	Plant scientist
Anthropologist	Range conservationist
Sociologist	Wildlife biologist
Architecture	Business Administration
Architect and marine architect	Administrative assistant
Realty specialist	Agricultural commodity grader
	Agricultural marketing specialist
Astronomy	Alcohol and tobacco tax
	inspector
Astronomer	Budget analyst
Cartographer	Contract negotiator
Geodesist	Financial institution examiner
	Industrial relations specialist
Bacteriology	Industrial specialist
	Investigator (General)
Microbiologist	Loan specialist
	Park ranger
Biology or Biological Sciences	Personnel management specialist
	Personnel staffing specialist
Agricultural commodity grader	Printing and
Agricultural management	publications officer
specialist	Public health program specialist
Animal husbandman	Quality assurance specialist
Biologist	Realty specialist

<p> Statistician  Supply management specialist  Tax law specialist  Traffic manager and traffic management specialist </p>	<p> Agricultural market reporter  Alcohol and tobacco tax inspector  Archivist  Budget officer  Financial institution examiner  Historian  Industrial relations specialist  Investigator (General)  Loan specialist  Operations research analyst  Printing and publications officer  Revenue officer  Sociologist  Statistician  Supply management specialist  Tax law specialist  Traffic manager and traffic management specialist </p>
<p>Cartography</p>	
<p>Cartographer</p>	
<p>Chemistry</p>	
<p> Agricultural commodity grader  Alcohol and tobacco tax inspector  Chemist  Compliance investigator  Consumer safety inspector  Fishery biologist  Forest products technologist  Geologist  Hydrologist  Medical technologist  Microbiologist  Oceanographer  Patent examiner  Pharmacologist  Quality assurance specialist </p>	
<p>Commercial Art</p>	
<p> Illustrator  Printing and publication officer  Visual information specialist </p>	
<p>Computer Science</p>	
<p> Computer programmer  Computer system analyst  Computer specialist  Computer scientist  Systems programmer  Data base administrator </p>	
<p>Economics</p>	
<p> Agricultural commodity grader  Agricultural marketing specialist </p>	
	<p> Education </p>
	<p> Educator  Recreation specialist  Sociologist  Statistician </p>
	<p>Engineering</p>
	<p> Alcohol and tobacco tax inspector  Cartographer  Engineer (various branches)  Environmentalist  Forest products technologist  Geodesist  Geologist  Hydrologist  Industrial specialist  Meteorologist  Oceanographer  Patent examiner  Quality assurance specialist  Realty specialist  Statistician </p>

English	Geodesy
Printing and publications officer	Cartographer
Public information specialist	Geodesist
Writer-editor	Meteorologist
Entomology	Geography
Entomologist	Cartographer
Finance	Meteorologist
Alcohol and tobacco tax inspector	Oceanographer
Financial institution examiner	Sociologist
Industrial relations specialist	Geology
Investigator (General)	Cartographer
Loan specialist	Geologist
Realty specialist	Hydrologist
Revenue officer	Meteorologist
Tax law specialist	Oceanographer
Traffic manager and traffic management specialist	Park ranger
	Range conservationist
	Realty specialist
Fine Arts	Geophysics
Illustrator	Cartographer
Recreation specialist	Geodesist
Visual information specialist	Geophysicist
Fish and Game Management	Meteorologist
Fishery biologist	Oceanographer
Park ranger	Physicist
Range conservationist	History
Wildlife biologist	Archivist
Food Technology	Historian
Agricultural commodity grader	Park ranger
Consumer safety inspector	Sociologist
Forestry	Home Economics
Cartographer	Agricultural commodity grader
Forester	Home economist
Forest products technologist	Hospital Administration
Park ranger	Hospital administrative assistant
Realty specialist	

Public health program specialist	Special agent (IRS)
Hydrology	Supply management specialist
Hydrologist	Tax law specialist
Industrial Arts	Library Science
Recreation specialist	Librarian
Industrial Management	Marketing
Administrative assistant	Agricultural commodity grader
Budget analyst	Agricultural marketing specialist
Industrial relations specialist	Agricultural market reporter
Industrial specialist	Contract negotiator
Investigator (General)	Statistician
Printing and publications officer	Supply management specialist
Quality assurance specialist	Mathematics
Supply management specialist	Agricultural marketing specialist
International Law or International Relations	Astronomer
Historian	Cartographer
Sociologist	Chemist
Landscape Architecture or Design	Economist
Landscape architect	Geodesist
Languages (Modern)	Geologist
Translator analyst	Geophysicist
Law	Hydrologist
Agricultural marketing specialist	Mathematician
Alcohol and tobacco tax inspector	Meteorologist
Attorney	Oceanographer
Contract negotiator	Operations research analyst
Criminal investigator	Statistician
Investigator (General)	Metallurgy
Loan specialist	Metallurgist
Realty specialist	Quality assurance specialist
Revenue officer	Meteorology
	Cartographer
	Hydrologist
	Meteorologist
	Oceanographer
	Microbiology
	Microbiologist

Natural Sciences	Forest products technologists
Meteorologist	Geodesist
Oceanographer	Geologist
Park ranger	Geophysicist
Range conservationist	Hydrologist
	Meteorologist
	Oceanographer
Nursing	Patent examiner
Nurse	Physicist
	Quality assurance specialist
Oceanography	Physiology
Cartographer	Pharmacologist
Fishery biologist	Physiologist
Meteorologist	
Oceanographer	Police Administration or Law
	Enforcement
Operations Research	
Operations research analyst	Border patrol agent
	Criminal investigator
	Customs inspector
Physical Sciences	Park ranger
Aerospace technologist	Special agent
Biomedical engineer	
Cartographer	Political Science
Chemist	Administrative assistant
Environmentalist	Archivist
Geophysicist	Budget officer
Hydrologist	Historian
Meteorologist	Industrial relations specialist
Oceanographer	Personnel management specialist
Patent examiner	Personnel staffing specialist
Pharmacologist	Sociologist
Physicist	
Statistician	Psychology
Physical Therapy	Personnel management specialist
Physical therapist	Personnel staffing specialist
	Psychologist
Physics	Public health program specialist
Alcohol and tobacco tax	Sociologist
inspector	Statistician
Cartographer	
Consumer safety inspector	Public Administration
Engineer	Archivist
	Administrative assistant

Budget officer  
Industrial relations specialist  
Investigator (General)  
Personnel management specialist  
Personnel staffing specialist  
Public health program  
specialist  
Management analyst  
Community planner  
Hospital management specialist

#### Social Sciences

Investigator (General)  
Park ranger  
Personnel management specialist  
Personnel staffing specialist  
Realty specialist  
Sociologist  
Statistician

#### Sociology

Archivist  
Personnel management specialist  
Public health program  
specialist  
Recreation specialist  
Sociologist  
Statistician

#### Statistics

Agricultural marketing specialist  
Economist  
Loan specialist  
Operations research analyst  
Sociologist  
Statistician  
Supply management specialist  
Traffic manager and traffic  
management specialist

#### Technology or Technical Curricula

Forest products technologist  
Patent examiner  
Quality assurance specialist

#### Transportation

Traffic manager and traffic  
management specialist

#### Visual Communications

Public information specialist  
Visual information specialist

#### Zoology

Entomologist  
Fishery biologist  
Physiologist  
Range conservationist  
Wildlife biologist  
Zoologist

General clerical  
     and administration  
 General education and training  
 General investigation  
 General transportation  
 Geography  
 Highway safety management  
 History  
 Hospital housekeeping management  
 Housing management  
 Immigration inspection  
 Import specialist  
 Industrial property management  
 Industrial specialist  
 Insurance examining  
 Intelligence  
 Internal Revenue officer  
 International relations  
 Labor management and employee  
     relations  
 Labor management relations  
     examining  
 Land law examining  
 Legal assistance  
 Legal clerical and administration  
 Librarian  
 Loan specialist  
 Logistics management  
 Management analysis  
 Manpower development  
 Manpower research and analysis  
 Museum curator  
 Occupational analysis  
 Outdoor recreation planner  
 Park management  
 Passport and visa examining  
 Personnel management  
 Personnel staffing  
 Position classification  
 Printing management  
 Production control specialist  
 Program analysis  
 Property disposal  
 Psychology  
 Public health inspection  
 Public health program specialist  
 Public information  
 Public utility specialist  
 Quality assurance specialist

Realty  
 Safety management  
 Salary and wage administration  
 Security administration  
 Social insurance administration  
 Social insurance claims examiner  
 Social science  
 Social services  
 Sociology  
 Supply group  
 Tax law specialist  
 Tax technician  
 Technical information services  
 Technical writing and editing  
 Trade specialist  
 Traffic management  
 Transport Operations  
 Transportation loss and damage  
     claims examining  
 Unemployment compensation claims  
     examining  
 Unemployment insurance  
 Veterans claims examining  
 Vocational rehabilitation  
     counselors  
 Wage and compliance specialist  
 Wage and hour law administration  
 Workmen's compensation  
     claims examining  
 Writing and editing

## The Federal Job System

The Professional Administrative Career Examination (PACE) is the primary avenue of entry into developmental positions which do not, in most cases, require a degree in any particular specialty. For persons having a college education or equivalent experience, the Professional Administrative Career Examination offers an opportunity for employment with most agencies throughout the country. A large majority of the positions filled are in the occupations listed below.

For information about methods of becoming eligible for consideration, obtain a copy of the announcement from a college placement office or from a Federal Job Information Center.

Career fields and positions covered by the Professional Administrative Career Examination include:

Adjudicating	Contractor industrial relations
Administrative officer	Criminal investigation
Appraising and assessing	Crop insurance administration
Agricultural and fisheries marketing reporter	Customs inspection
Agricultural marketing	Customs marine officer
Agricultural program specialist	Digital computer systems administration
Alcohol, tobacco, and firearms inspection	Economist
Archeology	Education research and program specialist
Archivist	Employee development specialist
Bond sales promotion	Facilities management
Budgeting and accounting	Financial analysis
Budget administration	Financial institution examining
Building management	Food assistance program specialist
Cargo scheduling	Foreign affairs
Civil Service retirement claims examining	General accounting clerical and administrative
Communications management	General arts and information
Communications specialist	General anthropology
Community planning	General business and industry
Computer specialist (trainee)	General claims examining
Contact representative	
Contract and procurement	

## Employment Picture for College Graduates

Federal agencies annually fill 20,000 or more positions at the career-entry levels (grades GS-5 and 7) in those administrative, professional, and technical occupations for which a bachelor's or master's degree is qualifying. This represents a very small percentage of the total number of college graduates entering the labor force each year, but the Federal Government does offer unique opportunities in many different fields and an objective application system which assures fair competition and systematic selection from among the best qualified candidates. Competition recently has been very keen. Opportunities are best for those who are willing to accept appointments at GS-5, who will consider a variety of career fields and locations, have skills which are in short supply, and achieve high ratings on the appropriate examinations.

Listed below are descriptions of the various application plans students may choose in competing for a Federal career appointment.

### PACE

The Professional and Administrative Career Examination (PACE) is the principal means of entry into Government for liberal arts graduates, although it is open to all majors and applicants with equivalent experience. Each year 10,000 to 12,000 hires are made through this route for more than 100 different positions and career fields. These are primarily administrative, technical, and professional positions and after developmental opportunities which lead trainees entering at grades GS-9, 11, 12 and beyond. (Grade levels for jobs in the Federal service are based on the level of responsibility of the position. Each grade corresponds to a specific salary range and requires a certain level of experience and/or education. For white-collar jobs, grades are designated as "GS" and range from GS-1 to GS-18. The usual career entry for college graduates is GS-5 or GS-7 grade level. Grades GS-6, 8 and 10 are not used for professional positions.)

Selection is from a competitive inventory of applications established through a written test which measures a range of job-related abilities. Applications of candidates who receive passing scores are placed in the inventory in score order and referred for positions as their scores are reached. Those whose college records

show outstanding academic achievement will receive supplementary credit.

Based on the number of applicants competing in this examination and the anticipated number of openings, a score of at least 94 will probably be needed for selection consideration in the major metropolitan areas of most parts of the country, and 88 or better for outlying installations in some locations. Applicants with specialized backgrounds such as majors in economics, six or more hours of accounting, and a willingness to travel frequently may be reached for consideration with scores in the mid 80s and sometimes below.

More detailed information on the written test and the outstanding academic achievement provision is given in the PACE announcement, No. 429.

In recent years, Federal agencies have hired 3,000 or more engineering graduates annually for entry-level positions. We anticipate continued excellent opportunities for employment.

Opportunities are good in most disciplines, varying by locality, but the needs are greatest for electronic, electrical, civil, mechanical, mining, and petroleum engineers. The booklet, Who's Hiring Engineers, gives detailed information about the major employers and geographic areas where the best opportunities exist.

There are some opportunities every year for applicants with degrees in chemistry, mathematics, physics, geology and the other physical sciences. Each year, approximately 1,000 physical scientists are hired at the career entry level.

There is no written test required for positions in either engineering or the physical sciences. Ratings are based entirely on the education and/or experience of the applicant. Most college graduates who fully meet the requirements at GS-5 and 7, as listed in Announcement 424, engineering, physical and mathematical sciences and related professions, will receive a basic score of 90. Additional points are awarded for other achievements such as B or better grade-point averages, related work experience, education beyond that needed to qualify for the grade, and professional registration. Final ratings may be lowered if applicants show no recent education or experience in their fields. Engineers with ratings of 85 or better can usually expect to be considered for employment in most areas, and those with ratings in the 70's may be referred for positions in shortage specializations or remote areas. Competition is much stiffer for the physical sciences, with a rating in the high 90's needed for most positions.

Major employers of accounting graduates include the Department of

the Treasury (Internal Revenue Service), General Accounting Office, and Department of Defense. Annual hires in the field usually range from 1,500 to 2,500. Extensive travel may be a condition of employment for some positions, especially auditors with the Department of Defense.

No written test is required. Applicants with a total of 24 semester or 36 quarter hours of accounting or related courses will fully meet all qualifications requirements at the entry level. The basic requirements may also be fulfilled with a combination of education and professional experience. Announcement No. 425 lists in detail all requirements for qualifying.

Accounting graduates who meet the requirements listed above will receive a basic score of 90 at the GS-5 level. At GS-7, a year of graduate education or professional experience, or an overall B average is needed to achieve this score. Additional points are given for such items as related work experience, 3.0 or higher grade-point average, additional education beyond that used to qualify for the grade, and membership in honorary or professional organizations. Final ratings may be lowered for applicants who show no recent education or experience in the accounting field.

Competition in accounting is particularly keen. Applicants with scores of 95 and above can usually expect to receive active employment consideration in most parts of the country, while those with scores of 90-94 may be considered for positions outside of major metropolitan areas or in jobs requiring frequent travel. Scores below 90 are rarely reached for referral. These are general guidelines, and score ranges may change with labor market conditions and agency hiring patterns.

Accountants who wish to increase their opportunities for employment should also consider applying under the Professional and Administrative Career Examination, as there are many jobs filled from that announcement which require 6 to 12 semester hours of accounting and offer excellent career growth.

Graduates in fields such as biology, agronomy, agricultural management, forestry, home economics, microbiology, and physiology face extremely tough competition for positions in their fields. Federal agencies usually fill 800 to 1,100 positions at the entry levels annually, but except for the fields of soil science and soil conservation, applicants far outnumber the positions available each year. Graduates in these field are encouraged to also apply under the PACE announcement to increase their opportunities for employment.

No written test is required, but there are specific course requirements for each of the career fields. The rating process is

similar to that for engineers and physical scientists. A set number of semester hours, usually 24 to 30 is needed in the particular field for a score of 90, with additional points given for B or better grade-point averages, additional education, or experience. It is usually necessary to have a minimum score of 96 or 97 to be considered for most positions, but applicants in the fields of soil conservation may be reached for consideration with ratings of 88 or above. For specific course requirements and procedures for applying, see Announcement 421.

There are other career-entry fields, such as health-related occupations, recreation, education, and the graphic arts, for which applications are collected by Office of Personnel Management offices through regional procedures. The fields for which applications are being accepted as well as brief statements about opportunities for placement are listed in the brochure "Current Federal Announcements (AN 2279)". This is available for review in your college placement office. Opportunities are generally very good in the health fields, especially for nurses, medical technologists, and medical radiology technicians. Opportunities in other fields, particularly education and training, are limited and very competitive. The quarterly publication "Federal Employment Outlook" (available through Federal Job Information Centers) summarizes the best opportunities in all fields. Students interested in applying for clerical, aide, or trades and crafts jobs may also find this summary useful.

For further information, contact the Federal Job Information Center (FJIC) in your area or see your College Career Planning and Placement Officer. The local or toll-free telephone number for the information centers is listed in the telephone book under U.S. Government. If there is no listing in your directory, you may call 800-555-1212 to obtain the toll-free number for a FJIC in your state.

## Office of Personnel Management College Recruitment Guidelines

Government jobs are classified and their pay rates determined on general schedule (GS) grade levels based on the responsibility of each position. The usual entry level for a college graduate (or someone with 3 years of general work experience) is grade GS-5 or GS-7.

### Starting Higher

For those who have experience or education above the bachelor's degree level, the Federal Government offers opportunities to enter the career service at higher grades. In several subject matter areas, a graduate degree alone is qualifying for GS-9 or above. With an appropriate degree, you can apply for a mid-level job in a wide variety of occupations, from architecture to zoology.

### Requirements

As a general rule, the education and experience required to qualify for positions at mid-level grades are as follows:

- GS-9      A bachelor's degree or 3 years of general work experience or an equivalent combination of each, with 9 months of education equal to one year of experience; plus 2 years of specialized experience in the same field as the job you are seeking, or a master's degree, or 2 full years of graduate education in an applicable subject matter field.
- GS-11      The same requirements as GS-9, plus one additional year of specialized experience or graduate education or a Ph.D.
- GS-11  
Research  
Position      Completion of all requirements for a master's or an equivalent degree for which at least 2 full academic years of graduate study is required when:
- a. The position involves primarily research or very similar research-type exploratory development of a creative or advanced scientific nature.
  - b. The knowledges required for the work are typically and preferably acquired through graduate study.
  - c. The work is of such character that the academic preparation will equip the candidate to perform fully

the professional work at the GS-11 level after a short orientation period.

GS-12            Completion of all requirements for a doctoral  
Research        degree (Ph.D. or equivalent) for appointment to  
Positions        such positions to meet the following criteria:

- a.    The position involves primarily research or very similar research-type exploratory development of a creative or advanced scientific nature.
- b.    The knowledges required for the work are typically and preferably acquired through graduate study at the doctoral (Ph.D. or equivalent) level.
- c.    The work is of such character that the academic preparation will equip the candidate to perform fully the professional work at the GS-12 level after a short orientation period.

#### What Are Your Chances?

There are several things to bear in mind when you are applying for a Federal job solely on the basis of an advanced degree.

- o    Opportunities to enter the Government at grades GS-9 and above are much more limited than at grades GS-5 and 7.
- o    Most jobs at mid-levels are filled by promoting people who were originally hired at lower grade levels and have progressed to the point where they are qualified to assume jobs with greater responsibility.
- o    Most agencies prefer applicants who have experience above and beyond their education.
- o    Graduate degrees must be directly related to the job to be filled in order to be qualifying at GS-9 and above. Since there are some positions for which there is no equivalent field of education, experience may be considered mandatory in these instances.

The primary route for graduate degree holders in management and administrative fields is the mid-level examination, which is used to fill positions in such fields as personnel management, financial management, economics, general administration, public information, and social science analysis.

There are also specialized examinations in other fields such as psychology, computer science, social work, and library science. The

announcements for engineering, accounting, and the life sciences described earlier also cover positions at the higher levels.

In seeking appointments at the mid-level (GS-9 through GS-12), however, graduates face stiff competition from applicants with experience directly related to the jobs to be filled. Those applicants with graduate degrees in engineering, economics, business administration, and geology may expect, depending on geographic availability and their program or agency interests, somewhat better chances for selection. Graduate applicants in other fields are especially encouraged to compete at the GS-7 level through PACE and the other specialized announcements where many more positions are filled.

There are no written test requirements for positions at GS-9 and above. Applicants are rated on the basis of their education and experience. Since the mid-level examinations are administered regionally, interested persons should contact the office maintaining the eligibility list in the area where they wish to work to determine whether applications are being accepted for their fields. A Federal Job Information Center will be able to tell you how to contact these offices.

Your college or university may be participating in a cooperative education plan with one or more agencies of the Federal Government. Under the co-op plan selected undergraduates can alternate periods of academic study with periods of study-related employment.

Design, schedule and availability of cooperative work-study opportunities with Federal agencies vary greatly among colleges. To find out how this plan might apply to you, consult your college placement office.

The Office of Personnel Management does not accept applications for Federal employment with the following Government agencies, but these agencies offer career opportunities in most of the fields covered by the PACE. For additional information on opportunities with these agencies, write to the addresses indicated.

Energy Research and Development  
Administration  
Division of Personnel  
Washington, D.C. 20545

Central Intelligence Agency  
Office of Personnel  
P.O. Box 1925  
Washington, D.C. 20013

Federal Bureau of Investigation  
Room 4306  
Department of Justice  
Washington, D.C. 20535

National Security Agency  
Fort Meade, Maryland 20755

Department of State  
Foreign Service Employment  
Division  
Washington, D.C. 20520

#### How to Apply

Written tests are not required at grades GS-9 and above. Your education and experience will be evaluated in accordance with the requirements of the job you seek.

There is no across-the-board application procedure covering all occupational categories.

#### For More Information

Complete information on Federal employment opportunities, including application forms, is available at Federal Job Information Centers. To get the number of the job information center serving your area, check the white pages of your local phone directory under "U.S. Government." If there is no listing, call 800-555-1212 to get the toll-free number for a Federal Job Information Center in your state.

#### One Last Word

If you are also interested in receiving job consideration at grades GS-5 and GS-7, you must, in most instances, follow different application procedures from those specified for the mid-levels. Contact the nearest Federal Job Information Center for details.

## Office of Personnel Management Special Recruitment Programs

There are a few special programs in which the Office of Personnel Management actively participates. These same programs in part are also conducted by the various Federal Government agencies.

The seven chapters which follow will explain the activities and goals of these programs. They are:

1. The Presidential Management Intern Program
2. The Youth Work Experience Program
3. Federal Employment of Cooperative Education Students
  - A. High School Students
  - B. Non-Baccalaureate Students
  - C. Baccalaureate Students
  - D. Graduate Students
4. Junior Fellowship Program
5. The Federal Summer Intern Program
6. The Intergovernmental Personnel Act Program
7. The Faculty Fellowship Program

NOTE: Other special employment programs are described starting on page 70.

## 1. The Presidential Management Intern Program

As President of the United States of America, it is hereby ordered as follows:

Section 1: There is hereby established the Presidential Management Intern Program, the purpose of which is to attract to Federal Service men and women of exceptional management potential who have received special training in planning and managing public programs and policies.

Section 2: Outstanding individuals who have pursued a course of study oriented toward public management at a graduate level educational institution and who, at the time of the application, have recently received or will shortly receive an appropriate advanced degree, are eligible to apply for participation in the Program.

Section 3: The United States Civil Service Commission...shall develop appropriate procedures for the recruitment, screening, and selection of applicants...The procedures so developed shall provide for such affirmative action as the Commission deems appropriate to assure equal employment opportunity...

Jimmy Carter

The White House  
August 25, 1977

On August 25, 1977, President Jimmy Carter signed the Executive Order creating a Presidential Management Intern Program which attempts to meet the Government's need for competent administrators - a need that continues to grow as the responsibilities of Government become more complex and specialized. The program's goal is to match the interests of recent graduates specifically trained in public management with the high priority needs of Federal departments and agencies.

The program, the President pointed out when signing the order, will give the Federal Government the chance to attract top public management talent. He also noted several additional benefits: "We can more directly tap the tremendous reservoir of innovation, education, experience, advice, and counsel that exists within our higher educational institutions that are not often used by Government." The

President explained, "At the same time the benefits will flow to the universities, because as a common assessment of the experiences of these interns is examined by Government and the universities, I think the teaching institutions will then see some of the latest problems and achievements and challenges of the Government itself."

This program is one of the first innovations made by the President to improve the Federal personnel system. As U.S. Civil Service Commission Chairman Alan Campbell said at the signing ceremony, "It is, I believe, the first step--small but significant--in our effort to totally revitalize the personnel system of the Federal Government."

Under this program, up to 250 outstanding public management graduates will enter the Federal Service each year for two-year internships. Interns will represent the highest caliber students of their schools. They will be expected to possess a personal commitment to excellence, exceptional ability and achievement, strong leadership qualities, and demonstrated interest in a public service management career.

By drawing participants from the diverse student population of the country's graduate schools of public management, the program will create a continuing source of highly trained and qualified men and women from a variety of social and cultural backgrounds to meet the challenges of governmental management.

Describing the various features of this program, the President stated, "For many reasons, I think this is one of the finest programs that I have had a part in...."

#### The Program

The Presidential Management Intern Program provides for two-year appointments to developmental positions throughout the Executive Branch of the Federal Government. Interns will apply the special skills they acquired in graduate school and through any previous employment. At the successful completion of their internships, participants will be eligible for regular civil service appointments.

Interns will work at headquarters, regional offices, and other field installations of Federal departments and agencies. Plans are also being developed for interns to be employed in State and local Governments in future years. The work of interns will fall into such categories as program planning and evaluation, policy analysis, financial management, labor relations, personnel management, program/management analysis, and administrative and management services. Specific work assignments will be based on the needs of employing agencies and the interests and capabilities of the interns.

Interns, for example, might work on an agency's budget request and justification, write speeches, review proposed legislation, answer congressional inquiries, draft reports, or analyze organizational patterns and structures. Assignments will involve significant work on pending issues in such program areas as natural resources, community and human development, and intergovernmental relations, and will demand flexibility, a willingness to work hard, and the capacity to learn quickly.

A distinguishing feature of the intern program is its educational aspect. Participants will attend orientation sessions at the beginning of their assignment, and will, throughout their internships, attend special seminars and training programs. It is expected that agencies will prepare career development plans for each intern. Career counseling will also be available.

#### General Information

Eligibility: Persons enrolled in graduate schools who will be receiving advanced degrees with a concentration in public management during the academic year are eligible to apply for the program.

Application Process: Application forms are available from the deans of graduate schools offering degrees in public management or from the Office of Personnel Management. Students interested in being considered for the program must be nominated by the deans of their schools. Applications, therefore, should be submitted to the deans, not to the Office of Personnel Management. The number of nominations from any one school is limited.

Selection: Nominations will be submitted to the Office of Personnel Management, which will schedule regional screening panels to interview candidates. Panels will be composed of representatives from public agencies and other individuals concerned with improved public management. From the pool of applicants referred by the regional screening panels, the Office of Personnel Management will select the finalists.

Placement: Finalists will be referred to several Federal agencies for placement. Preferences as to agencies, geographical locations, and occupational fields will be honored to the extent feasible. Offers of employment will be made by the agencies.

Pay and Benefits: Initial appointments will be made at Grade 9 of the General Schedule. Interns may receive career promotions in accordance with existing promotion guidelines. Interns will also be eligible to participate in such benefit programs as health and life insurance and the Federal retirement system.

For Further Information . . .

For application forms and further information on the Presidential Management Intern Program, contact the dean of your graduate school of public management or the Office of Personnel Management, Bureau of Intergovernmental Personnel Programs, 1900 E Street, N.W., Washington, D.C. 20415.

## 2. The Youth Work Experience Program

Everyone feels the need to belong, to be of real value to others, and to be recognized as a useful person. This human desire is especially urgent for the needy youth in America, who often view their own lives as pointless and hopeless.

As an employer, the Federal Government is well aware of this problem and has taken steps to alleviate it.

The two programs described in this section are designed to assist young people, ages 16 through 21, to gain work experience and to learn what will be required of them later, when they seek full-time employment. As members of the Federal workforce, these youths make significant contributions to the missions of their employing agencies. They are also able to use their salaries to supplement their family incomes, which is often necessary if they are to return to or continue their formal educations. Perhaps most important of all, they will have an opportunity to participate in the affairs of Government and have a real chance to test themselves as working and achieving young adults.

The opportunity for substantial numbers of needy young people to obtain summer work experience with the Federal Government as an employer was first initiated in the Spring of 1965. Since that time, the program has grown dramatically. Agencies now have a goal of one needy youth for every 40 regular employees on their payrolls.

Summer employees under the Summer Employment for Needy Youth Program are paid at the Federal minimum wage rate established by the Fair Labor Standards Act.

Agencies are asked to provide meaningful work assignments, as opposed to "make-work" jobs with the result that youths are employed as aids in a variety of occupational fields. They are able to visualize widening opportunities for their futures as they are exposed to the possibilities of our society. In addition, the agencies emphasize special activities which help the participants to a well-balanced summer employment experience. Orientation programs, job-related training, and cultural enrichment opportunities have all proven to be effective supplements to job assignments.

Individuals selected for this program must first be certified as eligible by an office of the State Employment Service in their local

communities. Preference is given to youths whose family incomes are at or near the poverty level. No specific knowledge or skill is required.

Every effort is made to place applicants in work assignments commensurate with their interests and abilities. Past work history and the availability of adequate transportation to the job site are among the other factors taken into consideration prior to placement.

Referrals of Summer Aids are normally made by local offices of the State Employment Service in the spring of each year, although appropriate school officials and other neighborhood workers may also assist in the recruitment of youths who would qualify as summer employees of the Federal Government.

Work activity under the Federal Summer Employment Program for Youth is scheduled for the period May 13 through September 30 of each year.

This program was introduced in the fall of 1965. Since then, part-time job opportunities for students have increased steadily.

The primary goal of the Stay-in-School Program is to give needy youths a chance to work part-time in Federal agencies, thus allowing them to continue their educations without interruptions caused by financial pressures.

Young people, ages 16 through 21, who are enrolled as students in an accredited secondary school or institution of higher learning and who meet the financial need criterion of the program, are permitted to work up to 16 hours a week during the school year and 40 hours a week during vacation periods. The work assignments are varied, and some agencies, because of the nature of their operations, are able to employ youths at times other than the customary working hours.

It is important, in all instances, that youths appointed as part of this program are, in the opinions of their school counselors and principals, maintaining an acceptable academic standard in their school work.

When suitable job openings are available in Federal agencies, local offices of the State Employment Service, as well as student financial aid officers, guidance counselors, and appropriate faculty members, refer applicants for these jobs. Appointments can be made any time during the course of the year - except for the period May 1 through August 31 (when summer jobs are filled as a result of either a summer employment examination or under agency merit staffing programs). However, students already working prior to May 1 may be continued throughout the summer months.

The regular rate of pay for participants in this program is fixed by

the employing agency--on the basis of duties assigned, and the expected level of performance. In no case will a student be paid less than the Federal minimum wage established by the Fair Labor Standards Act.

\* \* \* \* \*

Additional information about these Federal employment programs for needy youths may be obtained from the local offices of the State Employment Service or the nearest Office of Personnel Management Job Information Center.

### 3. Federal Employment of Cooperative Education Students

This Chapter provides a summary of employment opportunities in cooperative education in Federal agencies. It does not include the relatively small number of high school students who are also employed as co-ops in the Federal Government.

Cooperative education was initiated in the early 1900s as a means of strengthening student learning by alternating classroom work with study-related employment in the public and private sectors. For the student it is a means of earning and learning. For the college sponsoring a co-op program it is a means of strengthening the education process. For the employer it is an effective recruitment and low-cost training method.

In Federal agencies, cooperative education is utilized primarily as a means of identifying and preparing 2-year and 4-year students for career appointments after graduation. Large numbers of the students are selected because they are studying in fields related to occupations in which there is a shortage of candidates.

Federal agencies which have had substantial and long experience in employing cooperative education students give the program a generally high overall assessment. Among its values which they cite are:

- o The chance to review work performance of students before selecting them for entry-level positions.
- o The help the program affords as a viable and cost-effective tool in recruiting for hard-to-fill positions--especially in engineering and accounting.
- o The feed-in of new findings and theories from the educational environment.
- o The encouragement of women to try jobs usually held by men.
- o The effectiveness of co-op in the recruitment of minority candidates.
- o The relatively low cost and high effectiveness of training co-op students as compared with that of training newly employed graduates at high grade levels.

Detailed information on requirements for establishing or utilizing the Federal cooperative education programs at any level (high school

through graduate school) may be obtained by contacting the nearest Federal Job Information Center or the Office of Personnel Management, 1900 E. Street, N.W., Washington, D.C. 20415.

Use of cooperative education students by Federal agencies falls into four categories:

1. High School
2. Nonbaccalaureate in Two-Year Educational Institution
3. Baccalaureate in Four-Year Institution
4. Graduate Students

A. High School

Relatively few Federal agencies at this time use high school level cooperative education students. In the physical sciences, especially, agencies are increasingly being made aware of the need to interest women and minority students at the high school and junior high school level if successful recruitment at the BS or higher levels is envisioned. Federal use of high school cooperative educational programs thus will very likely increase in the near future, especially in urban areas where Federal work sites are near where high school students live.

B. Nonbaccalaureate Two-Year College Programs

This level of the cooperative education program applies to students who are working toward associate degrees in community and junior colleges or qualifying technical institutes.

Following are the general rules that apply to this level of cooperative education students:

1. There must be a signed agreement between the school and the Federal agency which provides for the student's reception instructions in an occupational field by combining periods of study with periods of study-related paid employment in a Federal agency.
2. The student must be accepted by the college in its cooperative education program and appointed by a Federal agency.
3. Students must be at least 16 years of age and generally must be citizens of the United States.
4. Students must be in full-time attendance at the educational institution (usually 12 hours per semester or the equivalent); must be enrolled in a qualifying cooperative education program; and must be recommended for employment by the appropriate officials at the educational institution.

5. A student's work assignments must be closely related to his or her major fields of study and the number of work periods determined by the agency, in cooperation with the school, are subject to the following requirements:

a. Work must not be scheduled wholly during summer periods or school vacations.

b. No student will work more than 1040 hours (40 hours a week) in any 12-month period.

c. Work periods should usually be at least 60 calendar days in length and be designed to correspond to a semester or quarter.

d. Students will usually work on a scheduled 40-hour a week basis for the full length of each work period unless a waiver is granted for part-time work.

e. Appointments permit a student to be in an employee status for only 2 1/2 years, so work schedules must be arranged so that school course requirements for graduation may be completed in this time period.

f. The student must complete before graduation in the agency recommending his or her conversion one or more work periods totaling 26 weeks (1040 hours) of full-time cooperative education experience in pay status (or equivalent part-time work if approved by the Office of Personnel Management).

6. Students who are studying full-time, who work in the following occupational series during their co-op work periods and who meet the requirements for the two-year college degree may be converted to appointments in the career staffs of the Federal agency without further examination or competition:

GS-312 Clerk Stenographer and Reporter  
GS-318 Secretary  
GS-404 Biological Technician  
GS-647 Medical Radiology Technician  
GS-649 Medical Machine Technician  
GS-699 Health Aid and Technician  
GS-802 Engineering Technician  
GS-962 Contact Representative  
GS-1311 Physical Science Technician  
GS-1341 Meteorological Technician

7. Payment of travel to the first co-op duty station will generally not be paid by the Federal agency involved.

C. Cooperative Education for Baccalaureate Students

This level of the cooperative education program applies to students working toward a baccalaureate degree at an accredited college or university.

Requirements for the four-year student are basically the same as those listed above for the two-year program with the following exceptions:

1. Occupational series during work periods and major fields of college study are much broader and cover any occupational series utilized by the Federal agency employing the student.

2. Appointments while in college are not limited to the 2 1/2 year period specified for the two-year co-op program.

3. As with the two-year program, the student must work a minimum of 26 weeks (1040 hours) in the Federal agency but he or she may work longer.

4. At least two separate work periods with the agency recommending conversion, interspersed with full-time academic study, must be completed prior to graduation.

5. The last work period must be within 18 months of the student's expected graduation date.

D. Cooperative Education for Graduate Students

This level of cooperative education program applies to students working toward degrees at the master's or doctor's level.

Requirements again are similar to those for the two- or four-year college student with the following exceptions:

1. The full-time work period may be continuous or in two work periods separated by a period of full-time academic study.

2. Requirements for the master's degree must be completed within 30 months and for the Ph.D. degree in 42 months after entering graduate school.

3. A combined total of 16 weeks of full-time employment in pay status must be completed, with 26 weeks (1040 hours) being the maximum number of weeks a student may work during a 12-month service year.

4. The cooperative work period generally will not be carried on while the student is also attending school full-time nor will the student normally attend classes during the work period.

#### 4. The Junior Fellowship Program

This is a program designed for High School Seniors who are talented, but disadvantaged.

NOAA will appoint Junior Fellows to work at various locations across the United States.

These positions will be in the following NOAA organizational elements: National Weather Service, National Ocean Survey, National Environmental Satellite Service, Environmental Data and Information Service and Environmental Research Laboratories. Junior Fellows will work with professional employees and will receive training related to their field of study, as it is applied in NOAA.

To be eligible, candidates must be:

- High School Seniors in the top 10 percent of their graduating class.
- Been accepted by (or have applied to) a four-year college.
- In need of financial assistance to continue their education.
- Interested in a field of study useful to NOAA:

- Cartography
- Physics
- Geophysics
- Geodesy
- Mathematics
- Engineering
- Business Administration
- Accounting
- Administrative Support

Junior Fellows begin as Student Assistants, GS-2, with the latest current starting salary. Upon completion of one year of college, and with satisfactory work performance in NOAA during vacation periods, Junior Fellows qualify for promotion to GS-3, and to GS-4 at the end of the second year. After graduation, Junior Fellows are eligible for appointment to professional positions in NOAA through normal Civil Service examining procedures.

Interested students should apply to their principal or counselor, who make nominations for the program to the Office of Personnel Management. Nominees for the Junior Fellowship Program are interviewed by a panel of NOAA officials, and successful candidates are appointed during the spring vacation of their Senior year as Student Assistants.

Competition for Junior Fellowships is expected to be keen. Interested students should consult with their principal or counselor early.

## 5. The Federal Summer Intern Program

The Summer Intern Program was established in 1969, for the express purpose of involving talented student leaders in operations of the Federal Government through meaningful summer employment in Federal agencies. The goals of this program are six-fold:

1. To familiarize young Americans with the day-to-day workings of the Federal Government through involvement in agency operations.
2. To open channels of communication between concerned students and Federal managers.
3. To create a talent-bank for future Federal staffing needs.
4. To accomplish needed work.
5. To develop student envoys who carry favorable impressions of the Federal system back to the campuses.
6. To provide meaningful summer employment for an important segment of the Nation's young people.

Since its inception in 1969, over 4000 scholars from colleges and universities across the nation have participated in the Summer Intern Program. Success in achieving the considerable goals for which the program was designed has been notable.

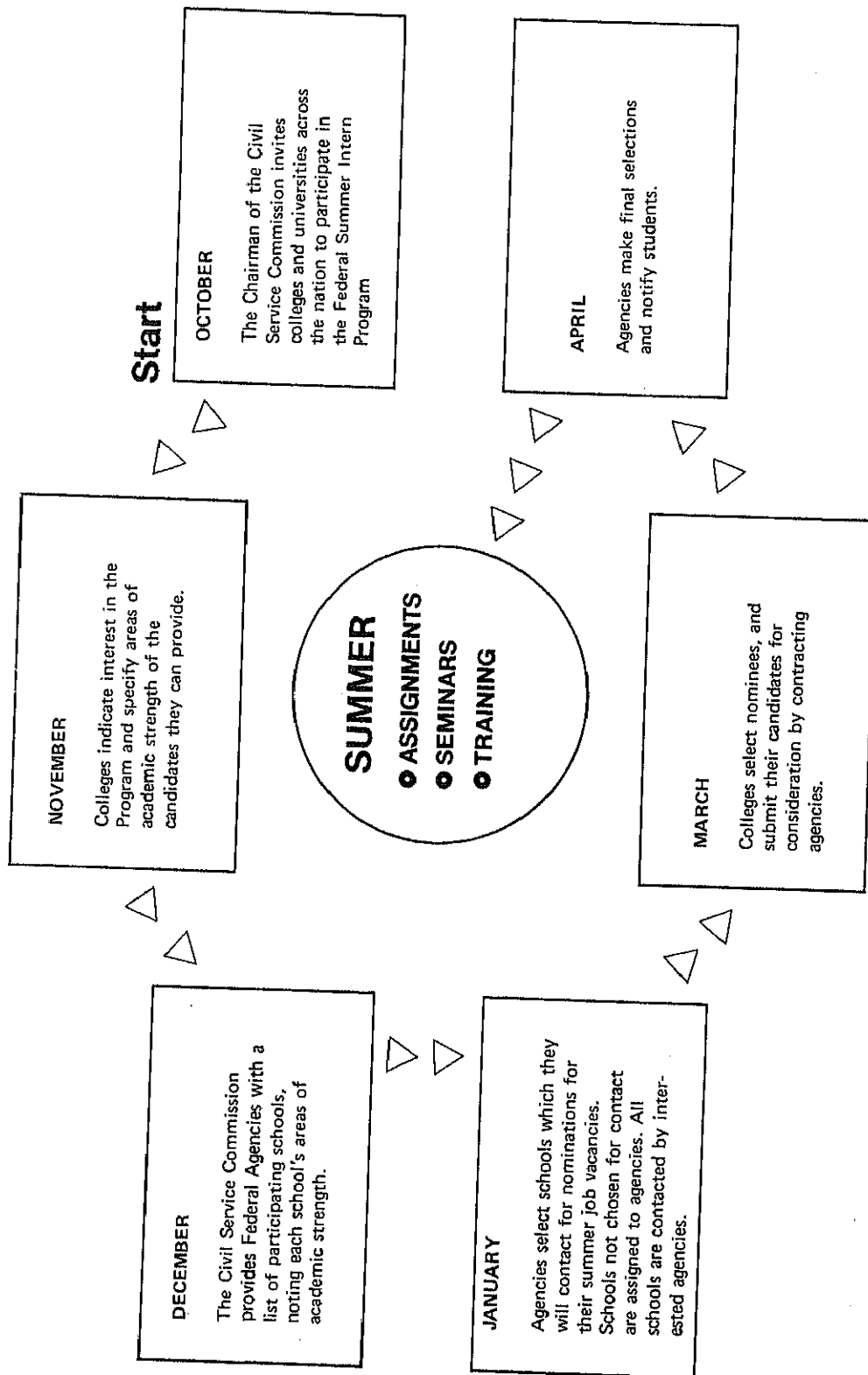
The Federal Summer Intern is a college student, who:

- ° will have completed two years, or 60 semester hours, of college credit by June, or who has graduate status;
- ° stands in the upper 1/3 of his or her class if an undergraduate, or in the upper 1/2 of the class if a graduate student;
- ° demonstrates above-average leadership qualities through in-school and extra-curricular activities; and
- ° intends to return to school in the fall.

### The Competition

There is lively competition for these Federal Summer Intern positions. Initially, there is campus-wide competition for the schools'

## THE SELECTION PROCESS



nominations. Students are considered on the basis of scholastic ability, demonstrated leadership qualities, honors, awards and recognition, and career goals and interests. Each agency contacts several schools for each of its vacancies. Each school is requested to submit at least two nominations for each job vacancy for which it is contacted. Experience shows that at the agency level, about ten candidates are considered for each opening.

Federal summer interns are assigned to career-related, non-clerical jobs in Federal agencies. As a part of the training, interns spend at least four hours per week in specially designed, agency-sponsored developmental activities, such as seminars, discussion groups, field trips, research, or lectures. In the metropolitan Washington, D.C. area, there is an interagency seminar program in which all interns participate.

#### Salary

Generally an intern's salary will be determined by his or her level of education. The following table illustrates the minimum levels of education required for the pay grades shown.

Grade	Education Completed
4	2 years of college
5	4 years of college
7	1 year of graduate work
9	2 years of graduate work
11	Doctoral degree

Some of the positions include: personnel staffing specialist, aerospace technician, program analyst, writer-editor, computer programmer, park ranger, biological assistant, research psychologist, statistician, and legal aid.

The Federal Summer Intern Program affords to a select group of promising young Americans the opportunity to acquire practical job experience as an integral part of their academic pursuits. At the same time, the Federal Government benefits from intern abilities and talents, develops contacts with possible future employees, and assures a two-way communications channel between the campus community and Federal managers.

## 6. The Intergovernmental Personnel Act Program

The passage of the Intergovernmental Personnel Act (IPA) of 1970 signified Federal recognition of the growing need for management assistance in State and local Governments.

The primary purpose of the IPA is to improve service to the public by strengthening State and local Government systems. The means established by Congress to achieve this goal are:

- o grants-in-aid,
- o technical assistance,
- o merit personnel standards,
- o intergovernmental personnel assignments,
- o access to training, and
- o intergovernmental cooperation in recruiting and examining.

The Office of Personnel Management administers the Act through its Bureau of Intergovernmental Personnel Programs and regional offices across the country.

IPA projects can support either traditional or innovative approaches to management improvement, be part of a long-range or short-term effort, help a small town or one of the largest States in the Nation, and use one or a combination of the means provided in the Act. The legislation itself mandates that the IPA "encourage innovation and allow for diversity on the part of the State and local Governments in the design, execution and management of their own systems of personnel administration." This demand has been translated into the hallmark of the IPA --- flexibility.

### IPA Intergovernmental Assignment Program

Purpose: To facilitate the temporary exchange of personnel between Federal executive agencies and States, local Governments, institutions of higher education, and Indian tribal Governments for work of mutual concern and benefit.

Participation (as of September 30, 1977):  
-1,965 workers from Federal agencies, 2,641 workers to Federal agencies;  
-Participating jurisdictions and organizations:

All 50 States  
All U.S. territories  
Over 350 local Governments  
25 Indian tribal Governments  
Approximately 425 colleges and universities

#### Intergovernmental Act Assignments

The IPA provides for the temporary assignment of personnel between the Federal and State or local Government of institutions of higher education. The mobility provisions of the IPA enable employees to be assigned as described above, for periods of up to two years.

Institutions of higher learning include private and public institutions, technical and junior colleges and 4 year colleges and universities.

Employees may be assigned from the Federal Government to institutions of higher education or from an institution of higher education of the Federal Government.

Salary costs may be shared by the two organizations involved or be paid entirely by one or the other. This is subject to negotiation between the two organizations. Also, travel and transportation costs may be shared or paid fully by one of the organizations. Per diem expenses are allowed as-well-as relocation expenses for movement of families.

Any one interested in this program should write to the agency in which they would like to be employed or from which a person is requested. Inquiries may also be directed to the Office of Personnel Management, 1900 E. St. NW, Washington, D.C.

## 7. The Faculty Fellowship Program

The Faculty Fellowship Program makes it possible for bona fide members of the faculty of an accredited college or university to work for periods of two to three months in Federal agencies. These appointments can be useful to the agency by bringing in faculty members who learn about Federal programs and who can then counsel students better regarding career goals and requirements. No written test is required.

In the National Oceanic and Atmospheric Administration, faculty fellowship appointments have usually been made for summer periods but there is no requirement which precludes their use at other times. Such appointments have been useful in furthering affirmative action goals through the appointment of women and minorities.

Application on a Standard Form 171 may be made directly to the agency in which the appointment is sought.

## **NOAA - A Description**

NOAA, created within the Department of Commerce in October 1970, was formed to improve people's understanding and use of their physical environment and oceanic resources in order to preserve and improve the quality of their life. Through its Major Line Components--Fisheries, Coastal Zone Management, Research and Development, and Oceanic and Atmospheric Services--NOAA carries out broad programs of research and service in all of the environmental sciences.

NOAA is a multi-faceted agency comprised of the following Major Program Elements:

- Office of Sea Grant
- Office of Ocean Engineering
- Environmental Research Laboratories
- Environmental Data and Information Service
- National Environmental Satellite Service
- National Ocean Survey
- National Weather Service
- National Marine Fisheries Services
- Coastal Zone Management

All of these program elements have headquarters in Metropolitan Washington, DC with one exception. Boulder, Colorado is headquarters for the Environmental Research Laboratories.

Field forces--personnel assigned to fisheries laboratories, communication centers, research facilities, ship based, mobile survey teams, and research and photographic air missions--constitute the largest part of NOAA's staff and are distributed throughout the United States and in selected foreign areas.

The mission of NOAA is scientific but multi-faceted:

National Ocean Survey prepares aeronautical charts, conducts precise geodetic and oceanographic surveys, predicts tides and currents, and prepares and publishes navigational charts and related materials for coastal waters and the Great Lakes. The survey also works toward applying the traditional forms of hydrographic and oceanographic surveys to solving environmental problems in our coastal zone. A fleet of research and survey ships is operated by the National Ocean Survey. The Survey is developing a system of automatic ocean buoys for obtaining essentially continuous marine environmental data, and provides a national focal point for technology related to instrument measurement, evaluation, and the reliability of sensing systems for ocean use.

The National Weather Service reports the weather of the United States and possessions; provides weather forecasts to the general public; issues warnings against tornadoes, hurricanes, floods, tsunamis, and other atmospheric and hydrologic hazards; and provides a broad array of special services to aeronautical, maritime, astronautic, agricultural, and other weather-sensitive activities. These services are supported by an increasingly automatic national network of observing and forecasting stations, communications links, satellite systems, and computers. Some 400 National Weather Service offices across the land ensure prompt and useful dissemination of weather information.

The National Marine Fisheries Service seeks to discover, describe, develop, and conserve the living resources of the global sea, especially as these effect the American economy and diet.

The Fisheries Service conducts biological research on economically important species; analyzes economic aspects of fisheries operations and rates; and develops methods for improving catches. With the U.S. Coast Guard, the National Marine Fisheries Service conducts enforcement and surveillance operations on the high seas and in territorial waters. It also studies game fish behavior and resources; seeks to describe the ecological relationships between game fish and other marine and estuarine organisms; and investigates the effects on game fish of thermal and chemical pollution. The Fisheries Service is the focus for NOAA's responsibilities under the 1972 Marine Mammals Protection Act and the 1973 Endangered Species Act. Financial assistance programs of benefit to industry are also administered by the Service.

The Environmental Research Laboratories are concerned with conducting the fundamental investigation needed to improve man's understanding of the physical environment. Research at facilities around the Nation focuses on the atmospheric and oceanic processes and their interactions, the coastal environment, solar-terrestrial and upper-air atmospheric dynamics, weather modification, the environmental effects of global pollution, and such geophysical events as severe local storms, hurricanes, and tsunamis. The Laboratories are also leaders in developing new electromagnetic and acoustic remote sensing devices for environmental observations, and in simulating atmospheric and oceanic processes with computer models. They are NOAA's focus for assessing human impacts on selected marine ecosystems, and the probable ecological impacts of petroleum development on Alaska's Outer Continental Shelf. NOAA's research aircraft are operated by the Laboratories.

The National Environmental Satellite Service operates the Nation's environmental satellite system and insures that the masses of data acquired flow in useful form to those who need them. The system includes the NOAA satellite in polar orbit 1,400 kilometers above the earth, and the Geostationary Operational Environmental Satellite (GOES) in earth-synchronous orbit 35,800 kilometers above the equator. NESS operates ground stations to receive and process satellite data, and has established field stations to meet regional needs for satellite data and products. NESS also develops new techniques for acquiring environmental satellite data and the application of these data to improving environmental monitoring, prediction, and warning.

The Environmental Data and Information Service acquires, processes, disseminates global environmental data and information. It also provides professional data management support to large-scale data-gathering programs and assesses the probable impact of environmental fluctuations on World food supplies and national energy programs. In addition to several other specialized service centers, the Data Service operates the National Climatic Center, National Oceanographic Data Center, and National Geophysical and Solar-Terrestrial Data Center, and provides administrative support for corresponding, collocated World Data Center--A subcenter which gathers data from cooperative investigations and other international sources.

The Office of Sea Grant administers and directs the National Sea Grant Program. This program provides support for institutions engaged in comprehensive marine research, education, and advisory service programs, supports individual projects in marine research and development, and sponsors education of ocean scientists and engineers, marine technicians and other specialists at selected colleges and universities. The office also manages NOAA's Marine Advisory Service to insure the transfer of information to the user community and the needs of the community back to the researchers.

The Office of Coastal Zone Management carries out NOAA's responsibilities under the Coastal Zone Management Act of 1972 (P.L. 92-583), legislation aimed at helping States reconcile the increasing demands on their coastal zone lands and resources. NOAA provides funds to aid States in developing and carrying out comprehensive programs for managing their coastal zones. The Office of Coastal Zone Management also provides grants to establish estuarine sanctuaries, and administers the marine sanctuaries program established as part of the Marine Protection, Research and Sanctuaries Act of 1972.

## Professional Careers Most Commonly Found In NOAA

On the following pages descriptions and information is given covering some types of professional careers most commonly found in NOAA. As of June 30, 1978 NOAA employed about 5,000 professional scientists and engineers. The most popular classifications were the following:

<u>Type</u>	<u>Number</u>
Meteorologists	1800
General Physical Scientists	780
Fishery Biologists	530
Cartographers	320
Electronic Engineers	200
Hydrologists	170
Physicists	150
Mathematicians	125
Oceanographer	

Career descriptions for some of these follow.

## Careers For Meteorologists

### Nature of Work

NOAA meteorologists work in several broad areas of meteorology--analysis, forecasting, research, climatology, data acquisition, and instrumentation. Synoptic meteorologists analyze weather data from satellites and worldwide networks of stations equipped with upper-air sounding equipment, radar, and surface observing instrumentation. Forecasters prepare a variety of forecasts for the general public and for specialized interests such as aviation, marine, and agriculture. Research meteorologists do research in atmospheric physics, refining and advancing meteorological theory and creating and improving mathematical models of atmospheric processes and events. They work in laboratories and in the field studying severe storm mechanics, weather modification, and new weather prediction techniques. Others contribute to the development of instrumentation, including satellites, to detect and measure all phenomena occurring in the atmosphere. Climatologists collect, organize, archive, interpret and publish climatological data. NOAA meteorologists are assigned to the National Weather Service, Environmental Research Laboratories, National Environmental Satellite Service, and Environmental Data and Information Service. They serve in more than 300 locations across the land.

Synoptic meteorologists deal with current and expected weather, and often start their careers at field stations which provide general and special weather services for aviation, agriculture and other specialized users, as well as the general public.

General services may include:

- Supplying forecasts to radio and television stations.
- Answering requests from the public for meteorological and climatological information.

Special services may include:

- Briefing aircraft pilots on weather conditions.
- Issuing and distributing "alerts" or "warnings" on hazardous weather conditions.
- Providing a special type of weather information on request.

Although weather observations are ordinarily made by meteorological technicians, a meteorologist may, on occasion, make observations of a special nature. Other activities include studies of local forecasting problems and further specialized training. Most forecast offices operate 24 hours a day, seven days a week. Forecasters, therefore, usually work eight hours a day on one of three rotating shifts. The standard work week is 40 hours. Additional pay is received for night work between 6 p.m. and 6 a.m.; for overtime in excess of 40 hours a week; or for work on holidays.

After several years of experience and training a meteorologist generally moves into a more specialized field such as:

Agricultural Meteorology	Mathematical Analysis & Programming
Aviation Forecasting	Marine Forecasting
Central Analysis & Prediction	Radar Meteorology
Climatology	Satellite Meteorology
Fire Weather Forecasting	Spaceflight Meteorology
Hurricane Forecasting	Severe Local Storm Forecasting

Increasingly broad and specialized experience which is accompanied by graduate study equips a meteorologist for staff or supervisory positions or for research in a specialized area of meteorology.

Many meteorologists are with weather offices or stations located usually at an airport. Weather operations may range from limited observations and briefings to a full scale program with comprehensive weather observations, international aviation, marine, agricultural and other forecast responsibilities. Each station may be staffed by as few as 10 to more than 50 personnel; this staff generally includes meteorological technicians and electronic technicians as well as meteorologists. The operation of each major office is directed by a Meteorologist in Charge, or MIC, who maintains liaison with local officials, officials of other agencies, radio and TV stations and newspaper editors. Except during periods when there is a shortage of personnel, the MIC usually works an eight hour day, five days a week.

Central weather analysis and prediction is performed at the National Meteorological Center (NMC), located at Suitland, Maryland. Various divisions of NMC work on development, data automation, extended forecasting (up to 30 days) and forecasting for less than 72 hours. Extensive teletype, facsimile and other networks provide world wide weather communications facilities. A meteorologist at NMC may also participate in programming meteorological problems or in the computation of changes and prognosis of atmospheric circulation, winds, temperature, moisture and other variables for making general and special forecasts of national importance.

Satellite meteorologists perform such work as the daily processing of satellite data by subjective interpretation and computer rectification; the development of empirical methods for applying satellite data to weather analysis; research on the detailed interpretation of visual and infrared satellite data; the development of satellite instrumentation based on theoretical considerations of atmospheric properties; basic research on the macro, meso and micro-scales, using satellite data; and the development of computer programs to rectify and interpret satellite data; most of this work is performed at NOAA's National Environmental Satellite Center, also located in Suitland, Maryland.

Research meteorologists conduct studies in areas such as air pollution, weather modification, radioactive contamination, polar meteorology, and sea-air-land interaction. Many of these programs are conducted in association with a number of other Federal agencies on a joint research basis, including NASA, Department of Energy, the Department of Defense and the Public Health Service.

Climatologists are employed principally at the National Climatic Center in Asheville, North Carolina. The Center collects weather data from first-order National Weather Service stations and from some 12,000 cooperative weather stations manned by voluntary observers. These data are analyzed and interpreted to determine the climate of the contiguous United States. Climatological information obtained from these studies is published at the Center and distributed to the World's scientific community. Planning in such areas as housing, marketing, shipping, agriculture, aviation and many other vital activities is based on such climatological information.

#### Location of Work

Each state has one or more weather stations. Perhaps the largest concentration of meteorologists is at NOAA's National Meteorological Center in Suitland, Maryland. Other groups of meteorologists are located at Weather Service Forecast Offices (WSFOs) in most of the major cities in the 50 states.

Research meteorologists are located at Silver Spring and Suitland, Maryland; Boulder, Colorado; Kansas City, Missouri; Cincinnati, Ohio; Norman, Oklahoma; Las Vegas, Nevada; Miami, Florida; Idaho Falls, Idaho; Oak Ridge, Tennessee; Raleigh, North Carolina; and Princeton, New Jersey.

NOAA maintains a significant Environmental Research Program headquartered at Boulder, Colorado, with field operations throughout the U.S.

### Basic Qualifications

GS-5/7: A B.S. degree in meteorology or other bachelor's degree with at least 20 semester hours of meteorology, including 6 semester hours each in synoptic and dynamic meteorology; 6 semester hours in differential and integral calculus; and 6 semester hours in physics. Graduate work or additional experience may qualify applicants for higher grade positions, GS-9 and up. The Office of Personnel Management evaluates candidates and determines if applicants qualify.

### Meteorologist Career Ladder - NOAA-Wide

<u>Grade</u>	<u>Percentage of NOAA Meteorologists</u>
Executive Level	2%
GS-15	6%
GS-14	12%
GS-13	29%
GS-12	24%
GS-11	14%
GS-09	8%
GS-5/7	5%

### Career Development Assignments

A variety of assignments in a meteorologist's career not only helps him/her select an area of specialization but provides him/her a good background for the specialization itself. Because career opportunities are located throughout NOAA, mobility is an important factor in career development.

It is equally desirable that a meteorologist gain experience in international assignments in view of the global nature of atmospheric problems. After several years of working experience in the U.S., a meteorologist should consider such an assignment. Because senior meteorologists spend considerable time at international meetings or are concerned with global weather, such experience can be quite beneficial.

NOAA also has an active training program which includes full-time scholarships, off-duty course work and duty hours study. When courses are related to an employee's work assignment, tuition and other benefits can be paid for.

## Careers For Fishery Biologists

### Nature of Work

NOAA's fishery biologists study the problems of growth and reproduction of fish and shellfish, attack the problems of disease, and identify and study subdivisions of oceanic stocks. To carry out this research, NOAA's fishery biologists study the life history, habits, classification, and economic relations of aquatic organisms to ensure an adequate and dependable supply of fish and shellfish, and the conservation of growth of the fishing industry. They study the effects of environmental and human-made changes on fish, determine rearing and planting for maximum success in hatchery operations, and devise ways to regulate fishing to ensure a continuing, maximum yield. They participate in International Treaties to conserve and maintain the resources. Specialization is often possible in such fields as embryology, histology, physiology, serology and virology. NOAA's fishery biologists work primarily in the National Marine Fisheries Service, one of NOAA's major organizations.

### Location of Work

NOAA's fishery biologists work at various research facilities throughout the United States. Applications may be filed with NOAA's Personnel Officers at the following locations:

Gloucester, Massachusetts  
St. Petersburg, Florida

Seattle, Washington  
Washington, D.C.

### Basic Qualifications

For GS-5 and GS-7: Completion of all requirements for a bachelor's or higher degree from an accredited university, with a major in the biological or agricultural sciences, or completion of appropriate course requirements plus a sufficient amount of experience and education to be the equivalent of the 4 year course of study. Specific course requirements which must be met are as follows: 30 semester hours, or equivalent, in biological sciences including:

a. 6 semester hours of aquatic subjects such as limnology, ichthyology, fishery biologists, aquatic botany, aquatic fauna, oceanography, fish culture, etc.

b. 12 semester hours in the animal sciences in subjects such as general zoology, vertebrate zoology, comparative anatomy, physiology, entomology, parasitology, ecology, cellular biology, genetics or research in those fields (excess course work in aquatic subjects may be used to meet this requirement when appropriate).

Graduate degrees or additional experience in this field may qualify applicants for the higher grade positions.

Fishery Biologist Career Ladder - NOAA-Wide

<u>Grade</u>	<u>Percentage</u>
GS-16	Less than 1%
GS-15	5%
GS-14	11%
GS-13	17%
GS-12	25%
GS-11	17%
GS-09	13%
GS-5/7	12%

Career Development

Fishery biologists may receive specialized university course assignments as required by the particular field in which they are working with NOAA.

NOAA has an active training program for employees involving full time scholarships, off-duty course work, and duty hours study. Where such courses are closely related to the employee's work assignments, tuition support and other benefits are available.

## Careers For Cartographers

### Nature of Work

NOAA cartographers compile and construct nautical and aeronautical charts and other cartographic products.

Cartographers work with an almost endless supply of data from surveys and other sources in constructing and revising various types of charts. In order to develop an appreciation and understanding for this data, they may participate in these surveys. Others may assist with hydrographic observations aboard ships of the National Ocean Survey fleet or other mobile field activities.

Since safe and efficient aeronautical and nautical operations depend on NOAA charts, a high degree of accuracy and attention to detail is required in the production and reduction of this data. Each cartographic area requires special evaluation procedures; soundings from hydrographic surveys must be checked to insure that corrections for water temperature, salinity and tidal level are accurate; that discrepancies between new and past data are reasonable; that they are properly located; that wire-drag surveys are made when necessary to resolve questionable situations; and that soundings are entered on charts which accurately represent the main characteristics of a bottom configuration. Cartographers use photogrammetry to plan extensive field surveys and to map shore detail from aerial photographs for nautical and aeronautical charting and in support of hydrographic surveys. They operate stereoscopic instruments and process hydrographic surveys. They operate stereoscopic instruments and process data through electronic computers to determine position and elevations of ground points and map detail. They measure glass plates exposed from ground stations on precise comparators using stars for camera orientation. They compute direction information obtained from orbiting satellites at widely separated points to provide a single, world geodetic datum. The proper acceptance, rejection and coordination of available information is of fundamental importance in cartographic evaluations.

Experienced cartographers supervise cartographic programs and engage in critical editing and review duties. They engage in research and development to devise improved cartographic methods and portrayal; for example; the handling of hydrographic sounding data by ADP or the application of photogrammetric data reduction of deep-sea stereo-photography, sea wave and current measurements, earth crustal movement studies, and photography from orbiting satellites.

Duties are usually performed during the regular five-day work week.

#### Location of Work

Most positions are located in the NOAA Headquarters offices at Rockville, Maryland, or in the Gramax Building in Silver Spring, Maryland, with a limited number at the Atlantic and Pacific Marine Centers at Norfolk, Virginia, and Seattle, Washington, respectively. Organizationally, they are in the National Ocean Survey, a component of NOAA.

#### Basic Qualifications

GS-5/7: B.S. degree in Cartography or any bachelor's degree when academic work includes either:

(a) 18 semester hours in one or a combination of the following: cartography, photogrammetry, geodesy, and plane surveying.

A graduate degree; additional experience or training; or superior academic achievement may qualify applicants for positions at higher beginning grade levels.

(b) At least 5 semester hours of appropriate college-level mathematics in two of the following courses: college algebra, trigonometry, analytic geometry, calculus (or any course for which any of these is a prerequisite) and at least 19 semester hours in any combination of astronomy, cartography, engineering science or drafting, forest mensuration, geodesy, geography, geology, geophysics, mathematics, meteorology, navigation, oceanography, optics, photo-interpretation, photogrammetry, physics, and surveying. (Courses in the history or teaching of these subjects are not acceptable.)

Candidates for cartography positions may also qualify without a degree on the basis of an equivalent combination of education and experience. The Office of Personnel Management evaluates candidates to determine their eligibility for employment.

#### Cartographer Career Ladder - NOAA-Wide

<u>Grade</u>	<u>Percentage</u>
Executive Level	1%
GS-15	1%
GS-14	4%
GS-13	15%
GS-12	28%

GS-11	22%
GS-09	12%
GS-5/7	17%
TOTAL	100%

#### Career Development Assignments

Cartographers may be assigned at early career stages to various ships and field parties to become acquainted with the data acquisition program. A wide range of assignments is considered desirable early in each individual's career. These varied assignments enable the intelligent selection of a career speciality and also provide a broad background for future specialization. Since various specialized programs are distributed throughout NOAA, mobility is of considerable importance to the advancement and career development of young cartographers.

NOAA has an active training program involving full time scholarships, off duty course work, and duty hours study, as well as on-the-job training. When courses are closely related to the employee's work assignment, tuition support and other benefits are available.

## Careers For Oceanographers

### Nature of Work

Most NOAA oceanographers are responsible for planning, conducting and participating in programs of research, development, test and evaluation, as applicable to the solution of environmental problems in the sphere of oceanic phenomena.

Special attention is focused on tides, water levels, and related studies and research, and the dynamics of the oceans, the land-sea and air-sea interface, and studies of the geophysical properties of the ocean floor, as well as studies of its biological content.

Duties are generally performed during the regular five-day work week, except when at sea. Travel is usually limited, except in connection with special projects. Special attention is given to the application of automation and computer technology in the oceanographer's work.

Occasionally, an oceanographer may be detailed to a resource biology program for a definite period of time as part of a team. This may occur when a specific oceanographic resource problem must be solved.

### Location of Work

Laboratories and offices are located at Seattle, Washington; Miami, Florida; Juneau, Alaska; Gloucester, Massachusetts; Boulder, Colorado; Silver Spring and Rockville, Maryland; and Honolulu, Hawaii.

### General Qualifications

GS-5 - B.S. degree. Specific study must have included at least 24 semester hours in oceanography, or a related discipline such as physics, meteorology, geophysics, mathematics, chemistry, engineering, geology, or biology, plus 20 semester hours in any combination of oceanography, physics, geophysics, chemistry, mathematics, meteorology, and engineering sciences. Candidates who qualify on the basis of a major in geology, must show at least six semester hours in a pertinent major directly concerned with marine science or oceanography; candidates who qualify on the basis of other physical sciences, engineering, or mathematics, must have completed differential and integral calculus and at least six semester hours in physics.

GS-7 and above - In addition to the above requirements, graduate study or professional work experience in the field of oceanography or a related science which has provided a basic knowledge of oceanography.

Graduates degrees or additional experience may qualify applicants for higher grade positions.

Oceanographer Career Ladder - NOAA-Wide

<u>Grade</u>	<u>Percentage</u>
Executive Level	1%
GS-15	6%
GS-14	13%
GS-13	22%
GS-12	16%
GS-11	21%
GS-09	7%
GS-5/7	14%
TOTAL	100%

Career Development Assignments

Oceanographers are assigned to full time attendance at universities when specialized study is needed in their work.

## Careers For Hydrologists

### Nature of Work

NOAA hydrologists make river, flood, and water-supply forecasts, and do research needed to improve such forecasts. Forecasts are required for public warnings, operation of reservoirs, availability of water supply, and river management for pollution abatement and many other purposes.

Candidates who satisfy the minimum entrance requirements may start in a River Forecast Center or as a Service Hydrologist in a Weather Service Forecast office. Those with advanced degrees may start in a River Forecast Center or in the Hydrologic Research Laboratory.

Hydrologist trainees at River Forecast Centers learn to interpret river and rainfall reports and to issue river and flood forecasts and warnings. With more experience, they devise means of adapting standardized forecast methods to the particular river basins assigned to the Center and engage in liaison activities with the U. S. Army Corps of Engineers and other users of river and flood forecasts.

Research is mostly centered in the National Weather Service Headquarters and is directed chiefly to more accurate evaluation of the various phases of the hydrologic cycle for the purpose of improving river and flood forecasts. It includes work with radar, satellites, computers and other modern devices.

Duties are performed during the regular five-day work week. During flood emergencies, work may be required at any time, including nights, week-ends and holidays.

### Location of Work

NOAA hydrologists are located in the Office of Hydrology, National Weather Service Headquarters at Silver Spring, Maryland; the Regional Headquarters at New York, New York; Fort Worth, Texas; Kansas City, Missouri; Salt Lake City, Utah; Anchorage, Alaska; at River Forecast Centers in;

Cincinnati, OH  
Slidell, LA

Harrisburg, PA  
Anchorage, AK

Hartford, CT  
Fort Worth, TX

Salt Lake City, UT	Sacramento, CA	Tulsa, OK
Atlanta, GA	Kansas City, MO	Portland, OR
Minneapolis, MN		

and at Weather Service Forecast offices in most of the 50 states.

#### Basic Qualifications

GS-5/7: B.S. degree with a major in hydrology, science or engineering which has included physics and mathematics through integral and differential calculus, and any combination of 30 semester hours in any of the following courses:

- a. hydrology
- b. physical science (including geophysical sciences)
- c. engineering science
- d. soils
- e. mathematics
- f. aquatic biology
- g. the management or conservation of water resources

An equivalent of 4 years of education and appropriate experience may also qualify applicants.

High class standing, graduate degrees or additional experience may qualify applicants for higher grade positions.

#### Hydrologist Career Ladder - NOAA-Wide

<u>Grade</u>	<u>Percentage</u>
Executive Level	2%
GS-15	4%
GS-14	14%
GS-13	26%
GS-12	36%
GS-11	13%
GS-09	4%
GS-5/7	1%
TOTAL	100%

### Career Potential

NOAA's career field in hydrology is expected to continue growing to meet the constantly expanding needs of a water conscious public. Hydrologists at river forecast centers range in grade from GS-5 to GS-14. Most experienced forecasters progress to GS-12 with supervisors at the higher grades.

Hydrologists at Regional Headquarters and in Silver Spring, Maryland, range in grade from GS-5 to GS-17 and most of them are GS-12 and higher.

### In-Service Training

NOAA has a training program for employees involving full-time scholarships, off-duty course work, and duty-hours study. Where such courses are already related to the employee's work assignment, tuition support and other benefits are available. On-the-job training leads to a thorough knowledge of hydrological and pertinent meteorological instruments, modern analytical methods, communications, unit-hydrograph derivation and application, stream-flow routing, evaporation and rainfall run-off relations.

## Careers For Engineers

### Nature of Work

NOAA engineers design, develop, install and maintain a variety of specialized instrumental equipment and data collection systems for scientific programs involving the earth, oceans, atmosphere and space. They develop new environmental satellite sensors, shipboard data and navigational equipment, geodetic distance-measuring devices, meteorological instruments, telecommunications systems, infrared applications, automated information systems, and telemetry devices. Civil engineers with field teams conduct precise geodetic surveys, astronomic observations, photogrammetric control, and related operations.

Beginning engineers usually perform testing or other basic assignments to become acquainted with the particular program area of their work. After orientation, they may evaluate design features of equipment being developed for use in environmental science or services. Initially, there is close supervision, but later assignments are accomplished more independently as experience and knowledge increase. Eventually, the engineer may develop original designs or solve engineering problems on his own. Experienced engineers originate and manage engineering and systems development programs.

Generally, duties are performed during normal working hours. Limited travel is required except when assignments are to mobile field parties.

### Location of Work

Geographically, NOAA engineers are located in Silver Spring, Rockville and Suitland, Maryland; and Sterling, Virginia, all in the suburban Washington, D.C. area. A large group of engineers is located at Boulder, Colorado, and a few in mobile units and small offices throughout the country. Engineers in aerospace work are located primarily at the National Environmental Satellite Service in Suitland, Maryland, where NOAA operational satellite systems are conceived, designed and implemented.

### Basic Qualifications

GS-5/7: B.S. degree in any branch of engineering or four years of college-level education and/or equivalent experience and education which provides a thorough knowledge of the physical and mathematical sciences underlying professional engineering and a good understanding of the

engineering sciences and techniques, and their application to one of the branches of engineering. Generally, the education must have included differential and integral calculus and courses (more advanced than first-year physics and chemistry) in five of the following seven areas of engineering science or physics:

- a. statics, dynamics
- b. strength of materials (stress-strain relationships)
- c. electrical fields and circuits
- d. nature and properties of materials (relating particle and aggregate structure to properties)
- e. any other comparable area of fundamental engineering science or physics, such as optics, heat transfer, soil mechanics, or electronics.

#### Engineering Career Ladder NOAA-Wide

<u>Grade</u>	<u>Percentage</u>
Executive Level	2%
GS-15	5%
GS-14	20%
GS-13	25%
GS-12	27%
GS-11	16%
GS-09	4%
GS-5/7	1%

#### Career Development Assignments

Some background experience in the use of instruments and the programs which utilize engineering data practices is desirable. In addition to normal on-the-job training programs, engineers may attend interagency courses or obtain additional courses at nearby universities under the Government Employee's Training Act.

## **NOAA Officer Corps**

The NOAA Corps is one of the Nation's seven uniform services. It combines some aspects of military life with the scientific mission of the National Oceanic and Atmospheric Administration. This combination provides an opportunity for engineering and science graduates to do technical work in the field and serve their country as commissioned officers. The Corps is especially oriented towards individuals who desire to develop their managerial skills, participate in a variety of assignments including sea duty and to do a considerable amount of travel.

The NOAA Corps is not a military service. However, as a uniformed service there are many parallels. NOAA Corps officers wear uniforms resembling those of the U. S. Navy. Grade and pay structure is identical to the Navy or Coast Guard. Medical care is provided for the officers and their dependents. Leave is earned at the rate of 2 1/2 days per month. Travel is governed by the Joint Travel Regulations of the Uniform Service. Retirement eligibility and survivor benefits accrue in the same way as in military service. NOAA officers may be transferred to the Department of Defense for duty as required in time of war or national emergency. NOAA officers are covered by the provisions of the Soldier's and Sailor's Civil Relief Act of 1940. They are also covered by the benefits and the services of the Veterans Administration.

Unlike the military services, the NOAA Corps is not subject to the Uniform Code of Military Justice except when transferred to the Department of Defense. There are no enlisted personnel in the NOAA Corps. The NOAA Corps does not have military base facilities such as exchange or commissary. However, officers normally have exchange and commissary privileges at the facilities of the other services.

Candidates for appointment in the NOAA Corps must be U. S. citizens of high moral character. They must hold a baccalaureate or higher degree in engineering or science from an accredited college, academy or university. Irrespective of the degree, each candidate must have completed integral and differential calculus, 8 semester hours physics through mechanics, heat, light, sound and circuits and at least 48 semester hours of NOAA related science. Good health and uncorrected vision of 20/70- or better in each eye correctable to 20/20 is required. Color blindness is disqualifying.

Application procedures for appointment to the NOAA Corps are handled differently than Civil Service applications. Inquiry into these procedures should be addressed to Recruiting Coordinator, Commissioned Personnel Division (NC1), NOAA, Rockville, Maryland 20852. 301-443-8616.

## NOAA Corps Student Trainee Program

The NOAA Corps in the summer of 1978, realizing the need to improve minority interest, initiated a new program to provide summer jobs to students who have completed at least their sophomore year. It has the advantage of allowing the students to learn about NOAA Corps careers early enough to adjust their academic programs to meet the stringent requirements for commissioning.

Appointments will be made at the GS-3 or 4 level about May 1 and will not exceed September 29. Assignments will usually be aboard NOAA ships working directly under NOAA Corps officers. However, some students will be assigned to National Geodetic Survey field parties commanded by NOAA Corps officers. Candidates for the student trainee program must be U. S. citizens of good moral character and in good health. Eye sight must be better than 20/70 in each eye and correctable to 20/20. Color blindness is disqualifying. Also, each student must be enrolled in a four year degree program during which he/she could qualify for commissioning. Each student should show career motivation towards the NOAA Corps.

Interested students may begin application by arranging for a personal interview with a NOAA Corps recruiting officer. Final selection will be made by the middle of March. For details and more information contact: Recruiting Coordinator, Commissioned Personnel Division (NC1), NOAA, Rockville, Maryland 20852, 301-443-8616.

## Other NOAA Special Emphasis Programs

Each summer NOAA has a number of programs which offer prospects for employment during vacation periods for undergraduate and graduate students, and faculty members. The summer program period runs from the middle of May through September of each year.

### Positions in Grades GS-1 through GS-4

This group has been divided into Group I and Group II. Group I positions are defined as clerical. Applicants for these positions are required to take the Office of Personnel Management's administered exam. Upon receiving written verification of eligibility (rating), applicants should apply to the NOAA Summer Employment Coordinator, 6001 Executive Boulevard, Rockville, MD. 20852 Attn: AD451., or appropriate field personnel office listed in the attachment. They MUST attach a copy of this rating to the application (SF-171).

Group II positions are non-clerical. Duties are of a subprofessional nature. Most of the jobs in Group II require education or experience appropriate to NOAA's programs. Examples of these jobs are listed in Announcement Number 414, Summer Jobs. To receive proper consideration, applicants must submit a OPM Form 1170/17, List of College Courses and Certificate of Scholastic Achievement, and a Personal Qualifications Statement, SF-171, to NOAA's Summer Employment Coordinator. Applications are rated in accordance with NOAA's Summer Employment Crediting Plan.

### Graduate Scientist Program

This program is designed to offer candidates entry level positions and career advancement opportunities in such scientific or technological fields as: biology, cartography, chemistry, engineering (e.g., chemical, civil, electrical, mechanical), geodesy, geophysics, hydrology, mathematics, meteorology, oceanography, physics, computer science and others.

NOAA provides a one year full-time study program at a recognized college or university designed for candidates who possess a Bachelors or Masters degree, but lack the scientific training in a specific NOAA

discipline (e.g. a mathematics or physics major who lacks hours in meteorology or a biology major who needs training in the fishery speciality to qualify as a fishery biologist).

This program was created for candidates within or outside of NOAA who meet these criteria. Trainees will undergo full-time training to qualify and ultimately be assigned in one of the specialized scientific occupations utilized by NOAA. All participants in this program will be required to sign a Training Agreement (three years of service for the one year of on-the-clock non-Government training).

Target positions are located in Washington, D.C., as well as other parts of the United States where NOAA's major organizational elements are located.

Candidates are usually hired at the GS-5 or GS-7 levels.

#### Vacation - Work Study Program Student Trainees in Engineering and the Physical Sciences

This is a program whereby college students who have completed their sophomore year are eligible for appointment in NOAA organizations at grades GS-3 and GS-4. These students must be pursuing majors in engineering or the physical sciences which include computer science, meteorology, oceanography, hydrology, geodesy, cartography, aerospace, physics, chemistry, and mathematics.

Students will work during the summer and/or vacation periods. The work assignments for the summer of 1978 were at NOAA locations in the Washington, D.C. area. In future years they are expected to be at locations adjacent to the colleges or universities where the students are enrolled.

The special on-the-job NOAA training will be tied directly to the educational pursuits of the student. Student trainees will work under the guidance of and will assist NOAA professionals engaged in research or other work.

Candidates must apply to the NOAA Special Personnel Programs Division, Attn: AD45, 6001 Executive Blvd., Rockville, MD 20852. A special announcement concerning this program was issued by NOAA during the month of March 1978. A similar announcement is expected early calendar year 1979.

#### Scientific Technician Program

The Scientific Technician Program is an on-the-job training program

designed to develop technicians in science or technology. Upon completion of a one year NOAA sponsored training program, trainees will officially enter their target position in the scientific field in which they trained. After that, employees should be able to move up the career ladder to the journeyman level in technician series positions throughout NOAA.

The program was created for candidates at the GS-2 through GS-7 level, or equivalent without specialized skills and experience in science and technology, who would be taught such skills on-the-job and in specialized courses to prepare them for non-degree technician positions. Upon completion of the Scientific Technician Program trainees may be assigned as technicians in the following fields: Biology, Cartography, Chemistry, Engineering (e.g., Chemical, Civil, Electronic, Mechanical), Geodesy, Hydrology, Mathematics, Meteorology, Oceanography, Physics and Computer Science. Candidates outside of NOAA generally will enter this program at the GS-2, GS-3 or GS-4 grade levels from the Office of Personnel Management Worker-Trainee Technical Aid or Technical Assistant registers, respectively. NOAA is primarily a field oriented agency, interested candidates should be mobile and list several geographical preferences when they apply.

## **NOAA Field Personnel Offices**

Chief, Personnel Division  
Northwest Administrative Services  
Office  
1700 Westlake Ave., North  
Seattle, WA 98109  
(206) 399-5790

### NATIONAL OCEAN SURVEY

Chief, Personnel Branch, NOS  
Atlantic Marine Center  
439 W. York Street  
Norfolk, VA 23510  
(804) 939-6231

### NATIONAL MARINE FISHERIES SERVICE

Chief, Personnel Division  
NMFS, Northeast Region  
Federal Bldg.  
14 Elm Street  
Gloucester, MA 01930  
(617) 837-9241

Chief, Personnel Division  
NMFS, Southeast Region  
Federal Bldg.  
9450 Koger Blvd.  
St. Petersburg, FL 33702  
(904) 826-3157

### ENVIRONMENTAL DATA and INFORMATION SERVICE

Chief, Personnel Division  
National Climatic Center  
Federal Bldg.  
Asheville, NC 28801  
(704) 672-0267

ENVIRONMENTAL RESEARCH LABORATORIES

Chief, Personnel Services  
Environmental Research Laboratories  
Boulder, CO 80302  
(303) 323-6305

NATIONAL WEATHER SERVICE

Chief, Personnel Division  
Eastern Region, NWS  
585 Stewart Ave.  
Garden City, NY 11530  
(516) 665-4170

Chief, Personnel Division  
Southern Region, NWS  
Rm., 10E09  
819 Taylor Street  
Ft. Worth, TX 76102  
(214) 334-2663

Chief, Personnel Division  
Central Region, NWS  
Kansas City, MO 64106  
(816) 374-3196

Chief, Personnel Division  
Western Region, NWS  
Box 11188  
Federal Bldg.  
125 South State Street  
Salt Lake City, UT 84147  
(801) 524-5128

Chief, Personnel Division  
Pacific Region, NWS  
Rm. 4110 Prince Kuhio  
Federal Bldg.  
300 Ala Moana  
Honolulu, HI 96850  
(415) 556-0220 (San Francisco Opr.)  
ask for Honolulu Opr. 808-546-5678

Chief, Personnel Division  
Alaska Region, NWS  
632 Sixth Ave.  
Anchorage, AK 99501  
(206) 399-0150 (Seattle Operator)  
ask for 265-4724



## Locations in the Washington, D.C. Metropolitan Area

